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18 FOR THE EASTERN DISTRICT OF CALIFORNIA  
19 FRESNO DIVISION

20 UNITED STATES OF AMERICA and )  
21 the California Department )  
22 of Toxic Substances Control, )  
23 Plaintiffs, )  
24 v. )  
25 CHEVRON USA, INC., )  
26 et al. )  
27 Defendants. )  
28

CIVIL ACTION NO.

CONSENT DECREE

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IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF CALIFORNIA  
FRESNO DIVISION

UNITED STATES OF AMERICA and  
the California Department  
of Toxic Substances Control,

Plaintiffs,

v.

CHEVRON USA, INC.,  
et al.

Defendants.

**LODGED**

**APR 21 1998**

CLERK, U S DISTRICT COURT  
EASTERN DISTRICT OF CALIFORNIA

BY \_\_\_\_\_ DEPUTY

CIVIL ACTION NO.

CONSENT DECREE

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1 I. BACKGROUND

2 A. The United States of America ("United States"), on  
3 behalf of the Administrator of the United States Environmental  
4 Protection Agency ("EPA"), filed a Complaint in this matter  
5 pursuant to Sections 106 and 107 of the Comprehensive  
6 Environmental Response, Compensation, and Liability Act  
7 ("CERCLA"), 42 U.S.C. §§ 9606, 9607.

8 B. The California Department of Toxic Substances Control  
9 (the "State") is an additional plaintiff in this action against  
10 the Defendants alleging that the Defendants are liable to the  
11 State under Section 107 of CERCLA, 42 U.S.C. § 9607.

12 C. The United States and the State in the Complaint seek,  
13 inter alia, (1) reimbursement of costs incurred and to be  
14 incurred by EPA, the Department of Justice, and the State for  
15 response actions at the Purity Oil Superfund Site in Fresno,  
16 California (the "Site"), together with accrued interest, and (2)  
17 performance of response Work by the defendants at the Site  
18 consistent with the National Contingency Plan, 40 C.F.R. Part 300  
19 (as amended) ("NCP").

20 D. In accordance with the NCP and Section 121(f)(1)(F) of  
21 CERCLA, 42 U.S.C. § 9621(f)(1)(F), EPA notified the State of  
22 California (the "State") on March 26, 1996 of negotiations with  
23 potentially responsible parties regarding the implementation of  
24 the remedial action for the Site, and EPA has provided the State  
25 with an opportunity to participate in such negotiations and be a  
26 party to this Consent Decree.

27 E. In accordance with Section 122(j)(1) of CERCLA,  
28 42 U.S.C. § 9622(j)(1), EPA notified the federal natural resource

1 trustee on May 14, 1996 of negotiations with potentially  
2 responsible parties regarding the release of hazardous substances  
3 that may have resulted in injury to the natural resources under  
4 federal trusteeship and encouraged the trustee to participate in  
5 the negotiation of this Consent Decree. On March 4 and 24, 1997,  
6 the federal natural resources trustees wrote to DOJ and notified  
7 DOJ that it was authorized to enter into this Consent Decree with  
8 the covenants not to sue set forth in Section XXI.

9 F. The defendants that have entered into this Consent  
10 Decree do not admit any liability to the plaintiffs or any other  
11 person or entity related to the Site, nor do they acknowledge  
12 that the release or threatened release of hazardous substances at  
13 or from the Site constitutes an imminent or substantial  
14 endangerment to the public health or welfare or the environment.  
15 The Settling Federal Agencies do not admit to any liability  
16 arising out of the transactions or occurrences alleged in any  
17 counterclaim asserted by the Settling Defendants, or which could  
18 have been asserted, or to any claim by the State;

19 G. Pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605,  
20 EPA placed the Site on the National Priorities List, set forth at  
21 40 C.F.R. Part 300, Appendix B, by publication in the Federal  
22 Register on December 30, 1982, 47 Fed. Reg. 58476. In response  
23 to a release or a substantial threat of a release of hazardous  
24 substance(s) at the Site, the State incurred response costs  
25 within the meaning of CERCLA sections 101(25) and 107(a), 42  
26 U.S.C. §§9601(25) and 9607(a).

27 H. In response to a release or a substantial threat of a  
28 release of hazardous substance(s) at or from the Site, EPA

1 commenced in January 1986 a Remedial Investigation and  
2 Feasibility Study ("RI/FS") for the Site, pursuant to 40 C.F.R.  
3 § 300.68.

4 I. EPA completed a Remedial Investigation ("RI") Report in  
5 October 1988 and a Feasibility Study ("FS") Report in April 1989.  
6 EPA selected a groundwater remedial action, which is embodied in  
7 the Record of Decision ("OU-1 ROD") for the Groundwater and Tanks  
8 Operable Unit (OU-1) signed by the EPA Regional Administrator on  
9 September 26, 1989.

10 J. On April 19, 1990, EPA issued General Notice letters  
11 for the Groundwater and Tanks Operable Unit (OU-1) to the first  
12 group of Potentially Responsible Parties ("PRPs"); EPA issued  
13 Special Notice letters for OU-1 to PRPs on April 1, 1991. EPA  
14 issued to nine PRPs Unilateral Administrative Order, Docket #91-  
15 28 (the "UAO") on September 30, 1991. The OU-1 Respondents were  
16 required to design and construct a groundwater extraction,  
17 treatment, and disposal system.

18 K. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617,  
19 EPA published a notice of the completion of the FS and of the  
20 proposed plan for remedial action for soils on June 8, 1992, in a  
21 major local newspaper of general circulation. EPA provided an  
22 opportunity for written and oral comments from the public on the  
23 proposed plan for the Soils Operable Unit from June 8, 1992 until  
24 August 10, 1992. A copy of the transcript of the public meeting  
25 is available to the public as part of the administrative record  
26 upon which the Regional Administrator based the selection of the  
27 response action for the Site.

28 L. EPA issued additional General Notice letters on June 5,

1 1992. The decision by EPA on the remedial action to be  
2 implemented at the Site for OU-2 is embodied in a final Record of  
3 Decision ("ROD"), executed on September 30, 1992, on which the  
4 State has given its concurrence. The ROD includes a  
5 responsiveness summary concerning the public comments. Notice of  
6 the final remedial action plan was published in accordance with  
7 Section 117(b) of CERCLA, 42 U.S.C. § 9617(b). An Explanation of  
8 Significant Differences was signed on September 6, 1996. The ESD  
9 is attached as Appendix B.

10 M. Based on the information presently available to EPA and  
11 the State, EPA and the State believe that the Work will be  
12 properly and promptly conducted by the Settling Work Defendant if  
13 conducted in accordance with the requirements of this Consent  
14 Decree and its appendices.

15 N. In 1993, EPA, the OU-1 Respondents, and fifty-two  
16 additional PRPs (the "Financially Contributing Signatories," or  
17 "FCSs") negotiated an Administrative Order on Consent (the "AOC")  
18 to design the OU-2 remedy. Under the AOC (which was executed on  
19 January 6, 1994), the OU-1 Respondents agreed to prepare the  
20 remedial design for OU-2, and the FCSs agreed to contribute  
21 \$2.468 Million to the OU-1 Respondents.

22 O. In March 1994, EPA issued additional General Notice  
23 Letters/Requests for Information to another group of PRPs.

24 P. An Explanation of Significant Differences (the "ESD")  
25 was signed by EPA on September 6, 1996. The ESD modified the OU-  
26 2 remedial action described in the ROD. The modifications  
27 included changes to the RCRA equivalent cap and the scaling down  
28 of the proposed soil vapor extraction system. The proposed

1 construction of the slurry wall also was eliminated.

2 Q. On April 14, 1995, EPA requested that all PRPs  
3 participate in an Alternative Dispute Resolution ("ADR") process  
4 to be mediated by the Honorable Layn R. Phillips, a retired  
5 federal district judge. EPA previously had reviewed the  
6 procedures governing the ADR process and acknowledged that the  
7 procedures and the selected mediator were acceptable. Over 140  
8 PRPs signed the Purity Oil Participating Party ADR Agreement,  
9 which became effective on July 6, 1995. The mediation commenced  
10 in July 1995 and involved sustained, vigorous and substantial  
11 negotiations among the Participating Parties. EPA and the State  
12 were invited to participate in some of the ADR meetings. As a  
13 result of the mediation and subsequent negotiations, Plaintiffs  
14 have reached a settlement agreement with Settling Defendants and  
15 Settling Federal Agencies with regard to the Site, which is  
16 embodied in this Consent Decree.

17 R. Solely for the purposes of Section 113(j) of CERCLA,  
18 the Remedial Action selected by the ROD and the Work to be  
19 performed by the Settling Work Defendant shall constitute a  
20 response action taken or ordered by the President.

21 S. The Parties recognize, and the Court by entering this  
22 Consent Decree finds, that the Parties have negotiated and  
23 entered into this Consent Decree in good faith, that  
24 implementation of this Consent Decree will expedite the cleanup  
25 of the Site and will avoid prolonged and complicated litigation  
26 between the Parties, and that this Consent Decree is fair,  
27 reasonable, and in the public interest.

28 NOW, THEREFORE, it is hereby ORDERED, ADJUDGED, and DECREED:

1 II. JURISDICTION

2 1. This Court has jurisdiction over the subject matter of  
3 this action pursuant to 28 U.S.C. §§ 1331 and 1345, and 42 U.S.C.  
4 §§ 9606, 9607, and 9613(b). This Court also has personal  
5 jurisdiction over the Parties. Solely for the purposes of this  
6 Consent Decree and the underlying Complaints, Defendants waive  
7 all objections and defenses that they may have to the  
8 jurisdiction of the Court or to venue in this District.  
9 Defendants shall not challenge the entry of this Consent Decree  
10 or this Court's jurisdiction to enter and enforce this Consent  
11 Decree.

12 III. PARTIES BOUND

13 2. This Consent Decree applies to and is binding upon the  
14 United States and the State and upon Settling Defendants and  
15 their heirs, successors and assigns. Any change in ownership or  
16 corporate status of a Settling Defendant including, but not  
17 limited to, any transfer of assets or real or personal property,  
18 shall in no way alter such Settling Defendant's responsibilities  
19 under this Consent Decree.

20 3. Settling Work Defendant shall provide a copy of this  
21 Consent Decree to each contractor hired to perform the Work (as  
22 defined below) required by this Consent Decree and to each person  
23 representing Settling Work Defendant with respect to the Site or  
24 the Work and shall condition all contracts entered into hereunder  
25 upon performance of the Work in conformity with the terms of this  
26 Consent Decree. Settling Work Defendant or its contractors shall  
27 provide written notice of the Consent Decree to all  
28 subcontractors hired to perform any portion of the Work required

1 by this Consent Decree. Settling Work Defendant shall  
2 nonetheless be responsible for ensuring that its contractors and  
3 subcontractors perform the Work contemplated herein in accordance  
4 with this Consent Decree. With regard to the activities  
5 undertaken pursuant to this Consent Decree, each contractor and  
6 subcontractor shall be deemed to be in a contractual relationship  
7 with the Settling Work Defendant within the meaning of Section  
8 107(b)(3) of CERCLA, 42 U.S.C. § 9607(b)(3).

9 IV. DEFINITIONS

10 4. Unless otherwise expressly provided herein, terms used  
11 in this Consent Decree that are defined in CERCLA or in  
12 regulations promulgated under CERCLA shall have the meanings  
13 assigned to them in CERCLA or in such regulations. Whenever  
14 terms listed below are used in this Consent Decree or in the  
15 appendices attached hereto and incorporated hereunder, the  
16 following definitions shall apply:

17 "AOC" shall mean the Administrative Order on Consent for  
18 Operable Unit Two, Docket # 94-04.

19 "CERCLA" shall mean the Comprehensive Environmental  
20 Response, Compensation, and Liability Act of 1980, as amended, 42  
21 U.S.C. §§ 9601 et seq.

22 "Consent Decree" shall mean this Decree and all appendices  
23 attached hereto (listed in Section XXIX). In the event of  
24 conflict between this Decree and any appendix, this Decree shall  
25 control.

26 "Date of Entry" shall mean the date this Consent Decree is  
27 signed by the United States District Court for the Eastern  
28 District of California.



1        "Date of Lodging" shall mean the date this Consent Decree  
2        (or a true copy thereof) is lodged with the Clerk of the Court  
3        for the United States District Court for the Eastern District of  
4        California.

5        "Day" shall mean a calendar day unless expressly stated to  
6        be a working day. "Working day" shall mean a day other than a  
7        Saturday, Sunday, or federal holiday. In computing any period of  
8        time under this Consent Decree, where the last day would fall on  
9        a Saturday, Sunday, or federal holiday, the period shall run  
10       until the close of business of the next working day.

11       "Defendants" shall mean the Settling Defendants and the  
12       Settling Federal Agencies.

13       "DTSC" shall mean the California Department of Toxic  
14       Substances Control and any successor departments or agencies of  
15       the State.

16       "EPA" shall mean the United States Environmental Protection  
17       Agency and any successor departments or agencies of the United  
18       States.

19       "ESD" shall mean the Explanation of Significant Differences  
20       signed on September 6, 1996. The ESD is attached as Exhibit B.

21       "Future Response Costs" shall mean all costs including, but  
22       not limited to, direct and indirect costs, that the United States  
23       or the State incurs after the Date of Entry in reviewing or  
24       developing plans, reports and other items pursuant to this  
25       Consent Decree, overseeing the Work, or otherwise implementing,  
26       overseeing, or enforcing this Consent Decree including, but not  
27       limited to, payroll costs, contractor costs, travel costs,  
28       laboratory costs, the costs incurred pursuant to Sections VII

(Remedy Review), IX (Access) (including, but not limited to, attorneys fees and any monies paid to secure access and/or to secure institutional controls, including the amount of just compensation), XV (Emergency Response), and Paragraph 80 of Section XXI (Work Takeover).

"Interest" shall mean interest at the rate specified for interest on investments of the Hazardous Substance Superfund established under Subchapter A of Chapter 98 of Title 26 of the U.S. Code, compounded on October 1 of each year, in accordance with 42 U.S.C. § 9607(a).

"National Contingency Plan" or "NCP" shall mean the National Oil and Hazardous Substances Pollution Contingency Plan promulgated pursuant to Section 105 of CERCLA, 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, and any amendments thereto.

"Natural Resources" shall have the meaning provided in Section 101(16) of CERCLA, 42 U.S.C. § 9601(16).

"Natural Resource Damages" means damages, including costs of damages assessment, recoverable under Section 107 of CERCLA for injury to, destruction of, or loss of any and all Natural Resources at the Purity Oil Site.

"Operation and Maintenance" or "O&M" shall mean all activities required to maintain the effectiveness of the Remedial Action as required under the Operation and Maintenance Plan approved or developed by EPA pursuant to this Consent Decree and the Statement of Work ("SOW").

"Paragraph" shall mean a portion of this Consent Decree identified by an arabic numeral or an upper case letter.

"Parties" shall mean the United States, the State of

1 California, and the Settling Defendants.

2 "Past Response Costs" shall mean all costs including, but  
3 not limited to, direct and indirect costs, that the United States  
4 and the State have incurred at or in connection with the Site  
5 through the Date of Entry, plus Interest on all such costs which  
6 has accrued pursuant to 42 U.S.C. § 9607(a) through such date.

7 "Performance Standards" shall mean the cleanup standards and  
8 other measures of achievement of the goals of the Remedial  
9 Action, set forth in Section X of the ROD and Section II of the  
10 SOW.

11 "Plaintiffs" shall mean the United States, on behalf of the  
12 United States Environmental Protection Agency, and the California  
13 Department of Toxic Substances Control.

14 "RCRA" shall mean the Solid Waste Disposal Act, as amended,  
15 42 U.S.C. §§ 6901 et seq. (also known as the Resource  
16 Conservation and Recovery Act).

17 "Record of Decision" or "ROD" shall mean the EPA Record of  
18 Decision relating to the Operable Unit Two at the Site signed on  
19 September 30, 1992 by the Regional Administrator, EPA Region 9,  
20 or his/her delegate, and all attachments thereto. The ROD is  
21 attached as Appendix A.

22 "Remedial Action" shall mean those activities, except for  
23 Operation and Maintenance, to be undertaken by the Settling Work  
24 Defendant to implement the ROD, in accordance with the SOW and  
25 the final Remedial Design and Remedial Action Work Plans and  
26 other plans approved by EPA.

27 "Remedial Action Work Plan" shall mean the document  
28 developed pursuant to Paragraph 11 of this Consent Decree and

1 approved by EPA, and any amendments thereto.

2 "Remedial Design Work Plan" shall mean the document  
3 developed pursuant to the AOC and approved by EPA, and any  
4 amendments thereto.

5 "Section" shall mean a portion of this Consent Decree  
6 identified by a roman numeral.

7 "Settling Cash Defendants" shall mean the named Settling  
8 Defendants listed in Appendix F who are signatories to this  
9 Consent Decree.

10 "Settling Defendants" shall mean Settling Work Defendant and  
11 the Settling Cash Defendants.

12 "Settling Federal Agencies" shall mean all departments,  
13 agencies and instrumentalities of the United States, including,  
14 but not limited to, those identified in Appendix G.

15 "Settling Work Defendant" shall mean Chevron USA Inc., its  
16 successors and assigns.

17 "Site" shall mean the Purity Oil Superfund Site,  
18 encompassing approximately 7 acres, located at 3254 South Maple  
19 Avenue in Fresno, Fresno County, California and depicted  
20 generally on the map attached as Appendix D, and includes all  
21 places where hazardous substances have come to be located.

22 "State" shall mean the California Department of Toxic  
23 Substances Control.

24 "Statement of Work" or "SOW" shall mean the Statement of  
25 Work for Soils Operable Unit Remedial Action, as set forth in  
26 Appendix C to this Consent Decree and any modifications made in  
27 accordance with this Consent Decree.

28 "Supervising Contractor" shall mean the principal contractor

1 retained by the Settling Work Defendant to supervise and direct  
2 the implementation of the work under this Consent Decree.

3 "UAO" shall mean the Unilateral Administrative Order for  
4 Operable Unit One issued by EPA on September 30, 1991, Docket  
5 #91-28.

6 "United States" shall mean the United States of America,  
7 including all of its departments, agencies and instrumentalities.

8 "Waste Material" shall mean (1) any "hazardous substance"  
9 under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14); (2) any  
10 pollutant or contaminant under Section 101(33), 42 U.S.C.  
11 § 9601(33); (3) any "solid waste" under Section 1004(27) of RCRA,  
12 42 U.S.C. § 6903(27); or as any of the foregoing terms are  
13 defined under any appropriate or applicable provisions of  
14 California law.

15 "Work" shall mean all activities the Settling Work Defendant  
16 is required to perform under this Consent Decree, except those  
17 required by Section XXV (Retention of Records).

18 V. GENERAL PROVISIONS

19 5. Objectives of the Parties

20 The objectives of the Parties in entering into this Consent  
21 Decree are to protect public health or welfare or the environment  
22 at the Site by the implementation of response actions at the Site  
23 by the Settling Work Defendant, to provide funds to the Settling  
24 Work Defendant to implement the Work, and to resolve the claims  
25 of the Parties each against the other which relate to the Site.  
26 A further objective of the Parties is to resolve claims for Past  
27 Response Costs and Future Response Costs incurred or to be  
28 incurred by the Plaintiffs, except as expressly provided in

1 Paragraphs 76, 77 and 79. The Parties also desire to incorporate  
2 the remaining tasks of the UAO's Statement of Work into this  
3 Consent Decree and terminate the UAO and the AOC as provided in  
4 Paragraph 10.

5 6. Commitments by Settling Defendants and Settling Federal  
6 Agencies

7 a. Settling Work Defendant shall perform the Work in  
8 accordance with this Consent Decree, the ROD, the ESD, the SOW,  
9 and all Work plans and other plans, standards, specifications,  
10 and schedules set forth herein or developed by Settling Work  
11 Defendant and approved by EPA pursuant to this Consent Decree.

12 b. Settling Cash Defendants and Settling Federal  
13 Agencies shall transfer funds to a Qualified Settlement Fund or  
14 an entity designated in writing by the Settling Work Defendant,  
15 all to be used by the Settling Work Defendant for conducting  
16 activities and fulfilling legal obligations related to the Site.

17 7. Compliance With Applicable Law

18 All activities undertaken by Settling Work Defendant  
19 pursuant to this Consent Decree shall be performed in accordance  
20 with the requirements of all applicable federal and state laws  
21 and regulations. Settling Work Defendant must also comply with  
22 all applicable or relevant and appropriate requirements of all  
23 federal and state environmental laws as set forth in the ROD and  
24 the SOW, or as otherwise authorized pursuant to this Consent  
25 Decree. The activities conducted pursuant to this Consent  
26 Decree, if approved by EPA, shall be considered to be consistent  
27 with the NCP.

28

1           8.   Permits

2           a.   As provided in Section 121(e) of CERCLA, 42 U.S.C.  
3   § 9621(e), and Section 300.400(e) of the NCP, 40 C.F.R.  
4   § 300.400(e), no permit shall be required for any portion of the  
5   Work conducted entirely on-site (i.e., within the areal extent of  
6   contamination or in very close proximity to the contamination and  
7   necessary for implementation of the Work). Where any portion of  
8   the Work that is not on-site requires a federal or state permit  
9   or approval, Settling Work Defendant shall submit timely and  
10   complete applications and take all other actions necessary to  
11   obtain all such permits or approvals.

12           b.   The Settling Work Defendant may seek relief under  
13   the provisions of Section XVIII (Force Majeure) of this Consent  
14   Decree for any delay in the performance of the Work resulting  
15   from a failure to obtain, or a delay in obtaining, any permit  
16   required for the Work.

17           c.   This Consent Decree is not, and shall not be  
18   construed to be, a permit issued pursuant to any federal or state  
19   statute or regulation.

20           VI.   PERFORMANCE OF THE WORK BY SETTTLING WORK DEFENDANT

21           9.   Selection of Supervising Contractor

22           a.   All aspects of the Work to be performed by  
23   Settling Work Defendant pursuant to Sections VI (Performance of  
24   the Work by Settling Work Defendant), VII (Remedy Review), VIII  
25   (Quality Assurance, Sampling and Data Analysis), and XV  
26   (Emergency Response) of this Consent Decree shall be under the  
27   direction and supervision of the Supervising Contractor, the  
28   selection of which shall be subject to disapproval by EPA after a

1 reasonable opportunity for review and comment by the State.  
2 Within 10 days after the Date of Lodging, Settling Work Defendant  
3 shall notify EPA and the State in writing of the name, title, and  
4 qualifications of any contractor proposed to be the Supervising  
5 Contractor. EPA will issue a notice of disapproval or an  
6 authorization to proceed. If at any time thereafter, Settling  
7 Work Defendant proposes to change a Supervising Contractor,  
8 Settling Work Defendant shall give such notice to EPA and the  
9 State and must obtain an authorization to proceed from EPA, after  
10 a reasonable opportunity for review and comment by the State,  
11 before the new Supervising Contractor performs, directs, or  
12 supervises any Work under this Consent Decree.

13           b. If EPA disapproves a proposed Supervising  
14 Contractor, EPA will notify Settling Work Defendant in writing.  
15 Settling Work Defendant shall submit to EPA and the State a list  
16 of contractors, including the qualifications of each contractor,  
17 that would be acceptable to Settling Work Defendant within 30  
18 days of receipt of EPA's disapproval of the contractor previously  
19 proposed. EPA will provide written notice of the names of any  
20 contractor(s) that it disapproves and an authorization to proceed  
21 with respect to any of the other contractors. Settling Work  
22 Defendant may select any contractor from that list that is not  
23 disapproved and shall notify EPA and the State of the name of the  
24 contractor selected within 21 days of EPA's authorization to  
25 proceed.

26           c. If EPA fails to provide written notice of its  
27 authorization to proceed or disapproval as provided in this  
28 Paragraph and this failure prevents the Settling Work Defendant



1 from meeting one or more deadlines in a plan approved by the EPA  
2 pursuant to this Consent Decree, Settling Work Defendant may seek  
3 relief under the provisions of Section XVIII (Force Majeure).

4 10. Incorporation of the Activities Under the Unilateral  
5 Administrative Order

6 a. All activities or work, including operation and  
7 maintenance, required pursuant to the Unilateral Administrative  
8 Order and not yet due or completed by the effective date of this  
9 Consent Decree shall be incorporated into this Consent Decree as  
10 Work to be performed by Settling Work Defendant. All work and  
11 activities incorporated into this Consent Decree from the UAO  
12 shall be subject to all of the requirements of this Consent  
13 Decree including, but not limited to, Stipulated Penalties.  
14 Copies of the UAO and related SOWs are included in Appendix E  
15 hereto.

16 b. The incorporated provisions of the Unilateral  
17 Administrative Order shall be binding upon the Settling Work  
18 Defendant and references to "Respondents" in the Unilateral  
19 Administrative Order shall be read to mean Settling Work  
20 Defendant and not Settling Cash Defendants or Settling Federal  
21 Agencies. The UAO and the AOC are terminated as to those  
22 Settling Cash Defendants and those Settling Federal Agencies that  
23 are parties to this Consent Decree.

24 c. Notwithstanding anything to the contrary in this  
25 Paragraph, this Consent Decree shall be controlling in the event  
26 any language or term in this Consent Decree conflicts with or is  
27 inconsistent with any provision of the UAO.

28 d. Nothing in this Paragraph or in this Consent

1 Decree shall relieve or affect any obligation of any party under  
2 the UAO or AOC if that party is not a Settling Cash Defendant or  
3 Settling Federal Agency under this Consent Decree.

4 11. Remedial Action

5 a. Within 60 days after the Date of Lodging of this  
6 Consent Decree, Settling Work Defendant shall submit to EPA and  
7 the State a work plan for the performance of the Remedial Action  
8 at the Site ("Remedial Action Work Plan"). The Final Remedial  
9 Design ("FRD") contains an index for the Remedial Action Work  
10 Plan. The Remedial Action Work Plan is entitled the "Remedial  
11 Design Implementation Work Plan" in the FRD. The Remedial Action  
12 Work Plan shall provide for construction and implementation of  
13 the remedy set forth in the ROD, the ESD and the SOW and  
14 achievement of the Performance Standards, in accordance with this  
15 Consent Decree, the ROD, the ESD, the SOW, and the design plans  
16 and specifications developed in accordance with the FRD approved  
17 by EPA on September 5, 1996. Upon its approval by EPA, the  
18 Remedial Action Work Plan shall be incorporated into and become  
19 enforceable under this Consent Decree. At the same time as it  
20 submits the Remedial Action Work Plan, Settling Work Defendant  
21 shall submit to EPA and the State a Health and Safety Plan for  
22 field activities required by the Remedial Action Work Plan that  
23 conforms to the applicable Occupational Safety and Health  
24 Administration and EPA requirements including, but not limited  
25 to, 29 C.F.R. § 1910.120.

26 b. The Remedial Action Work Plan shall include the  
27 following: (1) the schedule for implementation and completion of  
28 all Remedial Action tasks identified in the Final Remedial Design

1 submittal; (2) method for selection of the contractor; (3)  
2 schedule for developing and submitting other required Remedial  
3 Action plans; (4) methodology for implementation of the  
4 Construction Quality Assurance Plan; (5) monitoring plans for  
5 quarterly soil gas and passive gas consistent with designs  
6 accepted by EPA; (6) methods for satisfying permitting  
7 requirements; (7) methodology for implementation of the Operation  
8 and Maintenance Plan; (8) methodology for implementation of the  
9 Contingency Plan; (9) tentative formulation of the Remedial  
10 Action team; (10) construction quality control plan (by  
11 constructor); (11) procedures and plans for the decontamination  
12 of equipment and the disposal of contaminated materials; (12)  
13 plan for obtaining any necessary off-site access; (13) plan for  
14 evaluation of monitoring data consistent with design; (14) plan  
15 for purchase and construction of any gas treatment equipment that  
16 may be deemed necessary by EPA; (15) plan for producing O & M  
17 plans for any gas treatment equipment that may deemed necessary  
18 by EPA; (16) requirements for dust and vapor monitoring and  
19 control during construction.

20 c. Upon approval of the Remedial Action Work Plan by  
21 EPA, after a reasonable opportunity for review and comment by the  
22 State, Settling Work Defendant shall implement the activities  
23 required under the Remedial Action Work Plan. The Settling Work  
24 Defendant shall submit to EPA and the State all plans,  
25 submittals, or other deliverables required under the approved  
26 Remedial Action Work Plan in accordance with the approved  
27 schedule for review and approval pursuant to Section XI (EPA  
28 Approval of Plans and Other Submissions). Unless otherwise

1 directed by EPA, Settling Work Defendant shall not commence  
2 physical Remedial Action activities at the Site prior to approval  
3 of the Remedial Action Work Plan.

4 d. The Settling Work Defendant shall continue to  
5 implement the Remedial Action and O & M until the Performance  
6 Standards are achieved and for so long thereafter as is otherwise  
7 required under this Consent Decree.

8 12. Modification of the SOW or Related Work Plans

9 a. If EPA determines that modification to the Work  
10 specified in the SOW and/or in Work plans developed pursuant to  
11 the SOW is necessary to achieve and maintain the Performance  
12 Standards or to carry out and maintain the effectiveness of the  
13 remedy set forth in the ROD, the ESD and the SOW, EPA may require  
14 that such modification be incorporated in the SOW and/or such  
15 Work plans. Provided, however, that a modification may only be  
16 required pursuant to this Paragraph to the extent that it is  
17 consistent with the scope of the remedy set forth in the ROD, the  
18 ESD and the SOW.

19 b. For the purposes of this Paragraph 12 and  
20 Paragraphs 45 and 46 only, the "scope of the remedy set forth in  
21 the ROD, the ESD and the SOW" is the treatment, containment, and  
22 capping of contaminated soils.

23 c. If Settling Work Defendant objects to any  
24 modification determined by EPA to be necessary pursuant to this  
25 Paragraph, it may seek dispute resolution pursuant to Section XIX  
26 (Dispute Resolution), Paragraph 61 (record review). The SOW  
27 and/or related Work plans shall be modified in accordance with  
28 final resolution of the dispute.

1           d.     Settling Work Defendant shall implement any Work  
2 required by any modifications incorporated in the SOW and/or in  
3 Work plans developed pursuant to the SOW in accordance with this  
4 Paragraph.

5           e.     Nothing in this Paragraph shall be construed to  
6 limit EPA's authority to require, or Settling Work Defendant's  
7 right to utilize, the Dispute Resolution provisions herein to  
8 object to performance of further response actions as otherwise  
9 provided in this Consent Decree.

10          13.    Settling Work Defendant acknowledges and agrees that  
11 nothing in this Consent Decree, the SOW, or the Remedial Design  
12 or Remedial Action Work Plans constitutes a warranty or  
13 representation of any kind by Plaintiffs that compliance with the  
14 Work requirements set forth in the SOW and the Work Plans will  
15 achieve the Performance Standards.

16          14.    Settling Work Defendant shall, prior to any off-site  
17 shipment of Waste Material from the Site to an out-of-state waste  
18 management facility, provide written notification to the  
19 appropriate state environmental official in the receiving  
20 facility's state and to the EPA Project Coordinator of such  
21 shipment of Waste Material. However, this notification  
22 requirement shall not apply to any off-site shipments when the  
23 total volume of all such shipments will not exceed 10 cubic  
24 yards.

25          a.     The Settling Work Defendant shall include in the  
26 written notification the following information, where available:  
27 (1) the name and location of the facility to which the Waste  
28 Material is to be shipped; (2) the type and quantity of the Waste

1 Material to be shipped; (3) the expected schedule for the  
2 shipment of the Waste Material; and (4) the method of  
3 transportation. The Settling Work Defendant shall notify the  
4 state in which the planned receiving facility is located of major  
5 changes in the shipment plan, such as a decision to ship the  
6 Waste Material to another facility within the same state, or to a  
7 facility in another state.

8           b. The identity of the receiving facility and state  
9 will be determined by the Settling Work Defendant following the  
10 award of the contract for Remedial Action construction. The  
11 Settling Work Defendant shall provide the information required by  
12 Paragraph 14.a as soon as practicable after the award of the  
13 contract and before the Waste Material is actually shipped.

14                               VII. REMEDY REVIEW

15           15. Periodic Review

16           Settling Work Defendant shall conduct any studies and  
17 investigations as requested by EPA in order to permit EPA to  
18 conduct reviews of whether the Remedial Action is protective of  
19 human health and the environment at least every five years, as  
20 required by Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and  
21 any applicable regulations.

22           16. EPA Selection of Further Response Actions

23           If EPA determines, at any time, that the Remedial Action is  
24 not protective of human health and the environment, EPA may  
25 select further response actions for the Site (to be performed by  
26 Settling Work Defendant), in accordance with the requirements of  
27 CERCLA and the NCP.

28

1           17. Opportunity To Comment

2           Settling Work Defendant and, if required by Sections  
3 113(k)(2) or 117 of CERCLA, 42 U.S.C. §§ 9613(k)(2), 9617, the  
4 public, will be provided an opportunity to comment on any further  
5 response actions proposed by EPA as a result of the review  
6 conducted pursuant to Section 121(c) of CERCLA and to submit  
7 written comments for the record during the comment period.

8           18. Settling Work Defendant's Obligation To Perform Further  
9           Response Actions

10           If EPA selects further response actions for the Site, the  
11 Settling Work Defendant shall undertake such further response  
12 actions to the extent that the reopener conditions in Paragraph  
13 76 or Paragraph 77 (United States' reservations of rights based  
14 on unknown conditions or new information) or Paragraph 79  
15 (Plaintiffs' general reservations of rights) are satisfied.  
16 Settling Work Defendant may invoke the procedures set forth in  
17 Section XIX (Dispute Resolution) to dispute (1) EPA's  
18 determination that the remedial action is not protective of human  
19 health and the environment, (2) EPA's selection of the further  
20 response actions ordered as arbitrary and capricious or otherwise  
21 not in accordance with law, or (3) EPA's determination that the  
22 Settling Work Defendant's liability for the further response  
23 actions requested is reserved in Paragraphs 76, 77, or 79 or  
24 otherwise not barred by the Covenant Not to Sue set forth in  
25 Section XXI. Disputes pertaining to whether the Remedial Action  
26 is protective or to EPA's selection of further response actions  
27 shall be resolved pursuant to Paragraph 61 (record review).

1           19. Submissions of Plans

2           If Settling Work Defendant is required to perform the  
3 further response actions pursuant to Paragraph 18, it shall  
4 submit a plan for such Work to EPA for approval in accordance  
5 with the procedures set forth in Section VI (Performance of the  
6 Work by Settling Work Defendant) and shall implement the plan  
7 approved by EPA in accordance with the provisions of this Consent  
8 Decree.

9           VIII. QUALITY ASSURANCE, SAMPLING, and DATA ANALYSIS

10          20. Settling Work Defendant shall use quality assurance,  
11 quality control, and chain-of-custody procedures for all  
12 treatability, design, compliance and monitoring samples in  
13 accordance with "EPA Requirements for Quality Assurance Project  
14 Plans for Environmental Data Operation," (EPA QA/R5, May 1997);  
15 "Preparing Perfect Project Plans," (EPA /600/9-88/087), and  
16 subsequent amendments to such guidelines upon notification by EPA  
17 to Settling Work Defendant of such amendment. Amended guidelines  
18 shall apply only to procedures conducted after such notification.  
19 Prior to the commencement of any monitoring project under this  
20 Consent Decree, Settling Work Defendant shall submit to EPA for  
21 approval, after a reasonable opportunity for review and comment  
22 by the State, a Quality Assurance Project Plan ("QAPP") that is  
23 consistent with the SOW, the NCP and applicable guidance  
24 documents. If relevant to the proceeding, the Parties agree that  
25 validated sampling data generated in accordance with the QAPP(s)  
26 and reviewed and approved by EPA shall be admissible as evidence,  
27 without objection, in any proceeding under this Decree. Settling  
28 Work Defendant shall ensure that EPA and State personnel and



1 their authorized representatives are allowed access at reasonable  
2 times to all laboratories utilized by Settling Work Defendant in  
3 implementing this Consent Decree. In addition, Settling Work  
4 Defendant shall ensure that such laboratories shall analyze all  
5 samples submitted by EPA pursuant to the QAPP for quality  
6 assurance monitoring. Settling Work Defendant shall ensure that  
7 the laboratories they utilize for the analysis of samples taken  
8 pursuant to this Decree perform all analyses according to  
9 accepted EPA methods. Accepted EPA methods consist of those  
10 methods which are documented in the "Contract Lab Program  
11 Statement of Work for Inorganic Analysis" and the "Contract Lab  
12 Program Statement of Work for Organic Analysis," dated February  
13 1988, and any amendments made thereto during the course of the  
14 implementation of this Decree. Settling Work Defendant shall  
15 ensure that all laboratories it uses for analysis of samples  
16 taken pursuant to this Consent Decree participate in an EPA or  
17 EPA-equivalent QA/QC program. Settling Work Defendant shall  
18 ensure that all field methodologies utilized in collecting  
19 samples for subsequent analysis pursuant to this Consent Decree  
20 will be conducted in accordance with the procedures set forth in  
21 the QAPP approved by EPA and set forth in "Preparation of a US  
22 EPA Region 9 Field Sampling Plan for the State and PRP-Lead  
23 Projects (9QA-06-93, August 1993).

24 21. Upon request, the Settling Work Defendant shall allow  
25 split or duplicate samples to be taken by EPA and the State or  
26 their authorized representatives. Settling Work Defendant shall  
27 notify EPA and the State not less than 21 days in advance of any  
28 sample collection activity unless shorter notice is agreed to by

1 EPA. In addition, EPA and the State shall have the right to take  
2 any additional samples that EPA or the State deems necessary.  
3 Upon request, EPA and the State shall allow the Settling Work  
4 Defendant to take split or duplicate samples of any samples they  
5 take as part of the Plaintiffs' oversight of the Settling Work  
6 Defendant's implementation of the Work.

7 22. Settling Work Defendant shall submit to EPA and the  
8 State two copies of the results of all sampling and/or tests or  
9 other data obtained or generated by or on behalf of Settling Work  
10 Defendant with respect to the Site and/or the implementation of  
11 this Consent Decree, unless EPA agrees otherwise.

12 23. Notwithstanding any provision of this Consent Decree,  
13 the United States and the State hereby retain all of their  
14 information-gathering and inspection authorities and rights,  
15 including enforcement authorities related thereto, under CERCLA,  
16 RCRA and any other applicable statutes or regulations.

17 IX. ACCESS

18 24. Commencing upon the Date of Lodging of this Consent  
19 Decree, the Settling Work Defendant agrees to provide the United  
20 States, the State, and their representatives, including EPA and  
21 its contractors, access at all reasonable times to the Site and  
22 any other property to which access is required for the  
23 implementation of this Consent Decree, to the extent access to  
24 the property is controlled by Settling Work Defendant, for the  
25 purposes of conducting any activity related to this Consent  
26 Decree including, but not limited to:

- 27 a. Monitoring the Work;  
28 b. Verifying any data or information submitted to the

1 United States or the State;

2 c. Conducting investigations relating to  
3 contamination at or near the Site;

4 d. Obtaining samples;

5 e. Assessing the need for, planning, or implementing  
6 additional response actions at or near the Site;

7 f. Inspecting and copying records, operating logs,  
8 contracts, or other documents maintained or generated by Settling  
9 Defendants or their agents, consistent with Section XXIV (Access  
10 to Information); and

11 g. Assessing Settling Work Defendant's compliance  
12 with this Consent Decree.

13 25. To the extent that the Site or any other property to  
14 which access is required for the implementation of this Consent  
15 Decree is owned or controlled by persons other than Settling Work  
16 Defendant, Settling Work Defendant shall use best efforts to  
17 secure from such persons access for Settling Work Defendant, as  
18 well as for the United States and the State and their  
19 representatives including, but not limited to, their contractors,  
20 as necessary to effectuate this Consent Decree. For purposes of  
21 this Paragraph, "best efforts" include the payment of reasonable  
22 sums of money in consideration of access. If any access required  
23 to complete the Work is not obtained within 45 days of the Date  
24 of Entry of this Consent Decree, Settling Work Defendant shall  
25 promptly notify the United States in writing, and shall include  
26 in that notification a summary of the steps Settling Work  
27 Defendant has taken to attempt to obtain access. The United  
28 States or the State may, as it deems appropriate, assist Settling

1 Work Defendant in obtaining access. Settling Work Defendant  
2 shall reimburse the United States or the State for all costs  
3 incurred by the United States or the State in bringing an action  
4 to secure access.

5 26. Notwithstanding any provision of this Consent Decree,  
6 the United States and the State retain all of their access  
7 authorities and rights, including enforcement authorities related  
8 thereto, under CERCLA, RCRA and any other applicable statute or  
9 regulations.

10 X. REPORTING REQUIREMENTS

11 27. In addition to any other requirement of this Consent  
12 Decree, Settling Work Defendant shall submit to EPA and the State  
13 two copies of written monthly progress reports that (a) describe  
14 the actions that have been taken toward achieving compliance with  
15 this Consent Decree during the previous month; (b) include a  
16 summary of all results of sampling and tests and all other data  
17 received or generated by Settling Work Defendant or its  
18 contractors or agents in the previous month; (c) identify all  
19 Work plans, plans and other deliverables required by this Consent  
20 Decree completed and submitted during the previous month; (d)  
21 describe all actions including, but not limited to, data  
22 collection and implementation of Work plans, which are scheduled  
23 for the next month and provide other information relating to the  
24 progress of construction including, but not limited to, critical  
25 path diagrams, Gantt charts and Pert charts; (e) include  
26 information regarding percentage of completion, unresolved delays  
27 encountered or anticipated that may affect the future schedule  
28 for implementation of the Work, and a description of efforts made

1 to mitigate those delays or anticipated delays; (f) include any  
2 modifications to the Work plans or other schedules that Settling  
3 Work Defendant has proposed to EPA or that have been approved by  
4 EPA; and (g) describe all activities undertaken in support of the  
5 Community Relations Plan during the previous month and those to  
6 be undertaken in the next six weeks. Settling Work Defendant  
7 shall submit these progress reports to EPA and the State by the  
8 tenth day of every month following the lodging of this Consent  
9 Decree until EPA notifies the Settling Work Defendant pursuant to  
10 Paragraph 46.b of Section XIV (Certification of Completion). If  
11 requested by EPA or the State, Settling Work Defendant shall also  
12 provide briefings for EPA and the State to discuss the progress  
13 of the Work.

14         28. The Settling Work Defendant shall notify EPA of any  
15 change in the schedule described in the monthly progress report  
16 for the performance of any activity including, but not limited  
17 to, data collection and implementation of Work plans, no later  
18 than four days prior to the performance of the activity.

19         29. Upon the occurrence of any event during performance of  
20 the Work that Settling Work Defendant is required to report  
21 pursuant to Section 103 of CERCLA, 42 U.S.C. § 9603, or Section  
22 304 of the Emergency Planning and Community Right-to-know Act of  
23 1986 ("EPCRA"), 42 U.S.C. § 11004, Settling Work Defendant shall  
24 within 24 hours of the onset of such event orally notify the EPA  
25 Project Coordinator or the Alternate EPA Project Coordinator (in  
26 the event of the unavailability of the EPA Project Coordinator)  
27 or, in the event that neither the EPA Project Coordinator or  
28 Alternate EPA Project Coordinator is available, the Emergency

1 Response Section, Region 9, United States Environmental  
2 Protection Agency. These reporting requirements are in addition  
3 to the reporting required by CERCLA Section 103 or EPCRA Section  
4 304.

5 30. Within 20 days of the onset of such an event, Settling  
6 Work Defendant shall furnish to Plaintiffs a written report,  
7 signed by the Settling Work Defendant's Project Coordinator,  
8 setting forth the events which occurred and the measures taken,  
9 and to be taken, in response thereto. Within 30 days of the  
10 conclusion of such an event, Settling Work Defendant shall submit  
11 a report setting forth all actions taken in response thereto.

12 31. Settling Work Defendant shall submit three copies of  
13 all plans, reports, and data required by the SOW, the FRD, the  
14 Remedial Action Work Plan, or any other approved plans to EPA in  
15 accordance with the schedules set forth in such plans. Settling  
16 Work Defendant shall simultaneously submit two copies of all such  
17 plans, reports and data to the State.

18 32. All reports and other documents submitted by Settling  
19 Work Defendant to EPA and the State (other than the monthly  
20 progress reports referred to above) that purport to document  
21 Settling Work Defendant's compliance with the terms of this  
22 Consent Decree shall be signed by an authorized representative of  
23 the Settling Work Defendant.

24 XI. EPA APPROVAL OF PLANS AND OTHER SUBMISSIONS

25 33. After review of any plan, report or other item that is  
26 required to be submitted for approval pursuant to this Consent  
27 Decree, EPA, after reasonable opportunity for review and comment  
28 by the State, shall (a) approve, in whole or in part, the

1 submission; (b) approve the submission upon specified conditions;  
2 (c) modify the submission to cure the deficiencies; (d)  
3 disapprove, in whole or in part, the submission, directing that  
4 the Settling Work Defendant modify the submission; or (e) any  
5 combination of the above. However, EPA shall not modify a  
6 submission without first providing Settling Work Defendant at  
7 least one notice of deficiency and an opportunity to cure within  
8 30 days, except where to do so would cause serious disruption to  
9 the Work or where previous submission(s) have been disapproved  
10 due to material defects and the deficiencies in the submission  
11 under consideration indicate a bad faith lack of effort to submit  
12 an acceptable deliverable.

13 34. In the event of approval, approval upon conditions, or  
14 modification by EPA, pursuant to Paragraph 33(a), (b), or (c),  
15 Settling Work Defendant shall proceed to take any action required  
16 by the plan, report, or other item, as approved or modified by  
17 EPA, subject only to its right to invoke the Dispute Resolution  
18 procedures set forth in Section XIX (Dispute Resolution) with  
19 respect to the modifications or conditions made by EPA. In the  
20 event that EPA modifies the submission to cure the deficiencies  
21 pursuant to Paragraph 33(c) and the submission has a material  
22 defect, EPA retains its right to seek stipulated penalties, as  
23 provided in Section XX (Stipulated Penalties).

24 35. a. Upon receipt of a notice of disapproval pursuant  
25 to Paragraph 33(d), Settling Work Defendant shall, within 14 days  
26 or such longer time as specified by EPA in such notice, correct  
27 the deficiencies and resubmit the plan, report, or other item for  
28 approval. Any stipulated penalties applicable to the submission,

1 as provided in Section XX, shall accrue during the 7-day period  
2 or otherwise-specified period, but shall not be payable unless  
3 the resubmission is disapproved or modified due to a material  
4 defect as provided in Paragraphs 36 and 37.

5       b. Notwithstanding the receipt of a notice of disapproval  
6 pursuant to Paragraph 33(d), Settling Work Defendant shall  
7 proceed, at the direction of EPA, to take any action required by  
8 any non-deficient portion of the submission. Implementation of  
9 any non-deficient portion of a submission shall not relieve  
10 Settling Work Defendant of any liability for stipulated penalties  
11 under Section XX (Stipulated Penalties).

12       36. In the event that a resubmitted plan, report or other  
13 item, or portion thereof, is disapproved by EPA, EPA may again  
14 require the Settling Work Defendant to correct the deficiencies,  
15 in accordance with the preceding Paragraphs. EPA also retains  
16 the right to modify or develop the plan, report or other item.  
17 Settling Work Defendant shall implement any such plan, report, or  
18 item as modified or developed by EPA, subject only to its right  
19 to invoke the procedures set forth in Section XIX (Dispute  
20 Resolution).

21       37. If upon resubmission, a plan, report, or item is  
22 disapproved or modified by EPA due to a material defect, Settling  
23 Work Defendant shall be deemed to have failed to submit such  
24 plan, report, or item timely and adequately unless the Settling  
25 Defendant invokes the dispute resolution procedures set forth in  
26 Section XIX (Dispute Resolution), and EPA's action is overturned  
27 pursuant to that Section. The provisions of Section XIX (Dispute  
28 Resolution) and Section XX (Stipulated Penalties) shall govern



1 the implementation of the Work and accrual and payment of any  
2 stipulated penalties during Dispute Resolution. If EPA's  
3 disapproval or modification is upheld, stipulated penalties shall  
4 accrue for such violation from the date on which the initial  
5 submission was originally required, as provided in Section XX.

6 38. All plans, reports, and other items required to be  
7 submitted to EPA under this Consent Decree shall, upon approval  
8 or modification by EPA, be enforceable under this Consent Decree.  
9 In the event EPA approves or modifies a portion of a plan,  
10 report, or other item required to be submitted to EPA under this  
11 Consent Decree, the approved or modified portion shall be  
12 enforceable under this Consent Decree.

13 XII. PROJECT COORDINATORS

14 39. Within 20 days of the Date of Lodging of this Consent  
15 Decree, Settling Work Defendant, the State and EPA will notify  
16 each other, in writing, of the name, address and telephone number  
17 of their respective designated Project Coordinators and Alternate  
18 Project Coordinators. If a Project Coordinator or Alternate  
19 Project Coordinator initially designated is changed, the identity  
20 of the successor will be given to the other Parties at least 5  
21 working days before the changes occur, unless impracticable, but  
22 in no event later than the actual day the change is made. The  
23 Settling Work Defendant's Project Coordinator shall be subject to  
24 disapproval by EPA and shall have the technical expertise  
25 sufficient to adequately oversee all aspects of the Work. The  
26 Settling Work Defendant's Project Coordinator shall not be an  
27 attorney for any of the Settling Defendants in this matter. He  
28 or she may assign other representatives, including other

1 contractors, to serve as a Site representative for oversight of  
2 performance of daily operations during remedial activities.

3 40. Plaintiffs may designate other representatives  
4 including, but not limited to, EPA and State employees, and  
5 federal and State contractors and consultants, to observe and  
6 monitor the progress of any activity undertaken pursuant to this  
7 Consent Decree. EPA's Project Coordinator and Alternate Project  
8 Coordinator shall have the authority lawfully vested in a  
9 Remedial Project Manager ("RPM") and an On-Scene Coordinator  
10 ("OSC") by the National Contingency Plan, 40 C.F.R. Part 300. In  
11 addition, EPA's Project Coordinator or Alternate Project  
12 Coordinator shall have the authority, consistent with the  
13 National Contingency Plan, to halt any Work required by this  
14 Consent Decree and to take any necessary response action when he  
15 or she determines that conditions at the Site constitute an  
16 emergency situation or may present an immediate threat to public  
17 health or welfare or the environment due to the release or  
18 threatened release of Waste Material.

19 41. EPA's Project Coordinator and the Settling Work  
20 Defendant's Project Coordinator will meet, at a minimum, on a  
21 monthly basis.

22 XIII. ASSURANCE OF ABILITY TO COMPLETE WORK

23 42. Within 30 days of entry of this Consent Decree,  
24 Settling Work Defendant shall establish and maintain financial  
25 security in the amount of \$10,000,000 in one or more of the  
26 following forms:

27 (a) a surety bond guaranteeing performance of the  
28 Work;

1 (b) one or more irrevocable letters of credit equaling  
2 the total estimated cost of the Work;  
3 (c) a trust fund;  
4 (d) a guarantee to perform the Work by one or more  
5 parent corporations or subsidiaries, or by one or more  
6 unrelated corporations that have a substantial business  
7 relationship with the Settling Work Defendant; or  
8 (e) a demonstration that the Settling Work Defendant  
9 satisfies the requirements of 40 C.F.R. Part  
10 264.143(f).

11 43. a. If the Settling Work Defendant seeks to  
12 demonstrate its ability to complete the Work through a guarantee  
13 by a third party pursuant to Paragraph 42(d) of this Consent  
14 Decree, Settling Work Defendant shall demonstrate that the  
15 guarantor satisfies the requirements of 40 C.F.R. Part  
16 264.143(f). If Settling Work Defendant seeks to demonstrate its  
17 ability to complete the Work by means of the financial test or  
18 the corporate guarantee pursuant to Paragraph 42(d) or (e), it  
19 shall resubmit sworn statements conveying the information  
20 required by 40 C.F.R. Part 264.143(f) annually, on the  
21 anniversary of the effective date of this Consent Decree. In the  
22 event that EPA, after a reasonable opportunity for review and  
23 comment by the State, determines at any time that the financial  
24 assurances provided pursuant to this Section are inadequate,  
25 Settling Work Defendant shall, within 30 days of receipt of  
26 notice of EPA's determination, obtain and present to EPA for  
27 approval one of the other forms of financial assurance listed in  
28 Paragraph 42 of this Consent Decree. Settling Work Defendant's

1 inability to demonstrate financial ability to complete the Work  
2 shall not excuse performance of any activities required under  
3 this Consent Decree.

4       b. If Settling Work Defendant can show that the estimated  
5 cost to complete the remaining Work has diminished below the  
6 amount set forth in Paragraph 42 after Date of Entry of this  
7 Consent Decree, Settling Work Defendant may, on any anniversary  
8 of the Date of Entry of this Consent Decree, or at any other time  
9 agreed to by the Parties, reduce the amount of the financial  
10 security provided under this Section to the estimated cost of the  
11 remaining Work to be performed. Settling Work Defendant shall  
12 submit a proposal for such reduction to EPA, in accordance with  
13 the requirements of this Section, and may reduce the amount of  
14 the security upon approval by EPA. In the event of a dispute,  
15 Settling Work Defendant may reduce the amount of the security in  
16 accordance with the final administrative or judicial decision  
17 resolving the dispute.

18       44. Settling Work Defendant may change the form of  
19 financial assurance provided under this Section at any time, upon  
20 notice to and approval by EPA, provided that the new form of  
21 assurance meets the requirements of this Section. In the event  
22 of a dispute, Settling Work Defendant may change the form of the  
23 financial assurance only in accordance with the final  
24 administrative or judicial decision resolving the dispute.

25                   XIV. CERTIFICATION OF COMPLETION

26       45. Completion of the Remedial Action

27           a. Within 90 days after Settling Work Defendant  
28 concludes that the Remedial Action has been fully performed and

1 the Performance Standards have been attained, Settling Work  
2 Defendant shall schedule and conduct a pre-certification  
3 inspection to be attended by Settling Work Defendant, EPA, and  
4 the State. If, after the pre-certification inspection, the  
5 Settling Work Defendant still believes that the Remedial Action  
6 has been fully performed and the Performance Standards have been  
7 attained, it shall submit a written report requesting  
8 certification to EPA for approval, with a copy to the State,  
9 pursuant to Section XI (EPA Approval of Plans and Other  
10 Submissions) within 30 days of the inspection. In the report, a  
11 registered professional engineer and the Settling Work  
12 Defendant's Project Coordinator shall state that the Remedial  
13 Action has been completed in full satisfaction of the  
14 requirements of this Consent Decree. The written report shall  
15 include as-built drawings signed and stamped by a professional  
16 engineer. The report shall contain the following statement,  
17 signed by a responsible corporate official of Settling Work  
18 Defendant or the Settling Work Defendant's Project Coordinator:

19 To the best of my knowledge, after thorough  
20 investigation, I certify that the information contained  
21 in or accompanying this submission is true, accurate  
22 and complete. I am aware that there are significant  
penalties for submitting false information, including  
the possibility of fine and imprisonment for knowing  
violations.

23 If, after completion of the pre-certification inspection and  
24 receipt and review of the written report, EPA, after reasonable  
25 opportunity for review and comment by the State, determines that  
26 the Remedial Action or any portion thereof has not been completed  
27 in accordance with this Consent Decree or that the Performance  
28 Standards have not been achieved, EPA will notify Settling Work

1 Defendant in writing of the activities that must be undertaken by  
2 Settling Work Defendant pursuant to this Consent Decree to  
3 complete the Remedial Action and achieve the Performance  
4 Standards. Provided, however, that EPA may only require Settling  
5 Work Defendant to perform such activities pursuant to this  
6 Paragraph to the extent that such activities are consistent with  
7 the "scope of the remedy set forth in the ROD, the ESD and the  
8 SOW," as those terms are defined in Paragraph 12.b. EPA will set  
9 forth in the notice a schedule for performance of such activities  
10 consistent with the Consent Decree and the SOW or require the  
11 Settling Work Defendant to submit a schedule to EPA for approval  
12 pursuant to Section XI (EPA Approval of Plans and Other  
13 Submissions). Settling Work Defendant shall perform all  
14 activities described in the notice in accordance with the  
15 specifications and schedules established pursuant to this  
16 Paragraph, subject to its right to invoke the dispute resolution  
17 procedures set forth in Section XIX (Dispute Resolution).

18           b. If EPA concludes, based on the initial or any  
19 subsequent report requesting Certification of Completion and  
20 after a reasonable opportunity for review and comment by the  
21 State, that the Remedial Action has been performed in accordance  
22 with this Consent Decree and that the Performance Standards have  
23 been achieved, EPA will so certify in writing to Settling Work  
24 Defendant. This certification shall constitute the Certification  
25 of Completion of the Remedial Action for purposes of this Consent  
26 Decree including, but not limited to, Section XXI (Covenants by  
27 the United States and the State). Certification of Completion of  
28 the Remedial Action shall not affect Settling Work Defendant's

1 obligations under this Consent Decree.

2 46. Completion of the Work

3 a. Within 90 days after Settling Work Defendant  
4 concludes that all phases of the Work (including O & M) have been  
5 fully performed, Settling Work Defendant shall schedule and  
6 conduct a pre-certification inspection to be attended by Settling  
7 Work Defendant, EPA and the State. If, after the pre-  
8 certification inspection, the Settling Work Defendant still  
9 believes that the Work has been fully performed, Settling Work  
10 Defendant shall submit a written report by a registered  
11 professional engineer stating that the Work has been completed in  
12 full satisfaction of the requirements of this Consent Decree.  
13 The report shall contain the following statement, signed by a  
14 responsible corporate official of the Settling Work Defendant or  
15 the Settling Work Defendant's Project Coordinator:

16 To the best of my knowledge, after thorough  
17 investigation, I certify that the information contained  
18 in or accompanying this submission is true, accurate  
19 and complete. I am aware that there are significant  
penalties for submitting false information, including  
the possibility of fine and imprisonment for knowing  
violations.

20 If, after review of the written report, EPA, after reasonable  
21 opportunity for review and comment by the State, determines that  
22 any portion of the Work has not been completed in accordance with  
23 this Consent Decree, EPA will notify Settling Work Defendant in  
24 writing of the activities that must be undertaken by Settling  
25 Work Defendant pursuant to this Consent Decree to complete the  
26 Work. Provided, however, that EPA may only require Settling Work  
27 Defendant to perform such activities pursuant to this Paragraph  
28 to the extent that such activities are consistent with the "scope

1 of the remedy set forth in the ROD, the ESD and the SOW," as  
2 those terms are defined in Paragraph 12.b. EPA will set forth in  
3 the notice a schedule for performance of such activities  
4 consistent with the Consent Decree and the SOW or require the  
5 Settling Work Defendant to submit a schedule to EPA for approval  
6 pursuant to Section XI (EPA Approval of Plans and Other  
7 Submissions). Settling Work Defendant shall perform all  
8 activities described in the notice in accordance with the  
9 specifications and schedules established therein, subject to its  
10 right to invoke the dispute resolution procedures set forth in  
11 Section XIX (Dispute Resolution).

12       b. If EPA concludes, based on the initial or any  
13 subsequent request for Certification of Completion by Settling  
14 Work Defendant and after a reasonable opportunity for review and  
15 comment by the State, that the Work has been performed in  
16 accordance with this Consent Decree, EPA will so notify the  
17 Settling Work Defendant in writing.

18                   XV. EMERGENCY RESPONSE

19       47. In the event of any action or occurrence during the  
20 performance of the Work that causes or threatens a release of  
21 Waste Material from the Site that constitutes an emergency  
22 situation or may present an immediate threat to public health or  
23 welfare or the environment, Settling Work Defendant shall,  
24 subject to Paragraph 48, immediately take all appropriate action  
25 to prevent, abate, or minimize such release or threat of release,  
26 and shall immediately notify the EPA's Project Coordinator or, if  
27 the Project Coordinator is unavailable, EPA's Alternate Project  
28 Coordinator. If neither of these persons is available, the



1 Settling Work Defendant shall notify the EPA Emergency Response  
2 Unit, Region 9. Settling Work Defendant shall take such actions  
3 in consultation with EPA's Project Coordinator or other available  
4 authorized EPA officer and in accordance with all applicable  
5 provisions of the Health and Safety Plans, the Contingency Plans,  
6 and any other applicable plans or documents developed pursuant to  
7 the SOW. In the event that Settling Work Defendant fails to take  
8 appropriate response action as required by this Section, and EPA  
9 or, as appropriate, the State takes such action instead, Settling  
10 Work Defendant shall reimburse EPA and/or the State all costs of  
11 the response action not inconsistent with the NCP.

12 48. Nothing in the preceding Paragraph or in this Consent  
13 Decree shall be deemed to limit any authority of the United  
14 States or the State (a) to take all appropriate actions to  
15 protect human health or the environment or to prevent, abate,  
16 respond to, or minimize an actual or threatened release of Waste  
17 Material on, at, or from the Site, or (b) to direct or order such  
18 action, or seek an order from the Court, to protect human health  
19 or the environment or to prevent, abate, respond to, or minimize  
20 an actual or threatened release of Waste Material on, at, or from  
21 the Site, subject to Section XXI (Covenants by the United States  
22 and the State).

23 XVI. REIMBURSEMENT OF RESPONSE COSTS

24 49. Payments by Settling Cash Defendants

25 a. Within 30 days of the Date of Entry of this  
26 Consent Decree, all funds provided by each Settling Cash  
27 Defendant shall be deposited into a Qualified Settlement Fund  
28 under Treas. Reg. § 1.468B and Treas. Reg. § 301.7701-4(e) or

1 such other funding mechanism established and designated by mutual  
2 agreement of the Settling Defendants and the Settling Federal  
3 Agencies, in contribution towards the Work and fulfilling legal  
4 obligations related to the Site. Each such payment by a Settling  
5 Cash Defendant shall be in addition to any payments made or costs  
6 incurred to the Date of Entry, including payments made pursuant  
7 to the AOC or UAO and waived by each Settling Defendant in  
8 consideration of this Consent Decree relating to the Site. Each  
9 Settling Cash Defendant's obligations under this Consent Decree  
10 shall be limited to the payment of its requisite amount, except  
11 as specifically provided in Paragraphs 76, 77, 79.b, 79.c, and  
12 94.b; no Settling Cash Defendant shall be responsible for any  
13 payment required of any other Party. The name of each Settling  
14 Cash Defendant shall be submitted to the United States as  
15 provided in Section XXVI (Notices and Submissions) upon execution  
16 of the Consent Decree by each such Party. The name of each  
17 Settling Cash Defendant will be appended as Appendix F to this  
18 Consent Decree prior to lodging.

19           b. Payments by the Settling Federal Agencies

20                       (1) As soon as reasonably practicable after the  
21 effective date of this Consent Decree, the United States, on  
22 behalf of the Settling Federal Agencies other than the United  
23 States Postal Service ("USPS"), shall pay to the Settling Work  
24 Defendant or an entity designated in writing by the Settling Work  
25 Defendant, \$3,652,000.00 in contribution towards the Work and  
26 fulfilling legal obligations related to the Site. The USPS shall  
27 pay to the Settling Work Defendant or an entity designated in  
28 writing by the Settling Work Defendant, \$125,000.00 in

1 contribution towards the Work and fulfilling legal obligations  
2 related to the Site. The Settling Federal Agencies' obligations  
3 under this Consent Decree shall be limited to the above payments,  
4 except as specifically provided in Paragraphs 76, 77, 79.b and  
5 79.c. The United States shall not be responsible for any payment  
6 required of any other Defendant.

7 (2) The Parties to this Consent Decree recognize  
8 and acknowledge that the payment obligations of the Settling  
9 Federal Agencies under this Consent Decree can only be paid from  
10 appropriated funds legally available for such purpose. Nothing  
11 in this Consent Decree shall be interpreted or construed as a  
12 commitment or requirement that any Settling Federal Agency  
13 obligate or pay funds in contravention of the Anti-Deficiency  
14 Act, 31 U.S.C. § 1341, or any other applicable provision of law.

15 c. In the event that payments required by Paragraphs  
16 49.a or b are not made within 120 days of the Date of Entry of  
17 this Consent Decree, Interest on the unpaid balance shall be paid  
18 at the rate established pursuant to Section 107(a) of CERCLA, 42  
19 U.S.C. § 9607(a), commencing on the 121st day after the Date of  
20 Entry of this Consent Decree and accruing through the date of the  
21 payment.

22 d. The failure of any Settling Cash Defendant to  
23 satisfy its payment obligation pursuant to this Paragraph shall  
24 not defer the obligations of the Settling Work Defendant under  
25 this Consent Decree.

26 50. Any money paid to Settling Work Defendant pursuant to  
27 Paragraph 49 and not expended in performance of Work or other  
28 activities pursuant to this Consent Decree shall be transferred

1 to the United States, on behalf of EPA, to be applied at the  
2 United States' election towards reimbursement of Past Response  
3 Costs or Future Response Costs not reimbursed under this Consent  
4 Decree, within 30 days of EPA's execution of the Certification of  
5 Completion pursuant to Paragraph 46.b. Settling Work Defendant  
6 shall provide a financial audit of all expenses within 60 days of  
7 Plaintiffs' request. Any disputes arising under this Paragraph  
8 between the parties shall be settled pursuant to the Dispute  
9 Resolution provisions of Section XIX. If the United States, on  
10 behalf of EPA, is owed funds under this Paragraph, the United  
11 States will provide Settling Work Defendant instructions on  
12 transferring the funds owing to the United States, on behalf of  
13 EPA.

14                   XVII. INDEMNIFICATION AND INSURANCE

15           51. a. The United States and the State do not assume any  
16 liability by entering into this agreement or by virtue of any  
17 designation of Settling Work Defendant as EPA's authorized  
18 representative under Section 104(e) of CERCLA, 42 U.S.C. §  
19 9604(e). Settling Work Defendant shall indemnify, save and hold  
20 harmless the United States, the State, and their officials,  
21 agents, employees, contractors, subcontractors, or  
22 representatives for or from any and all claims or causes of  
23 action arising from, or on account of, negligent or other  
24 wrongful acts or omissions of Settling Work Defendant, its  
25 officers, directors, employees, agents, contractors,  
26 subcontractors, and any persons acting on its behalf or under its  
27 control, in carrying out activities pursuant to this Consent  
28 Decree including, but not limited to, any claims arising from any

1 designation of Settling Work Defendant as EPA's authorized  
2 representative under Section 104(e) of CERCLA. Further, the  
3 Settling Work Defendant agrees to reimburse the United States and  
4 the State all costs they incur including, but not limited to,  
5 attorneys fees and other expenses of litigation and settlement  
6 arising from, or on account of, claims made against the United  
7 States or the State based on negligent or other wrongful acts or  
8 omissions of Settling Work Defendant, its officers, directors,  
9 employees, agents, contractors, subcontractors, and any persons  
10 acting on its behalf or under its control, in carrying out  
11 activities pursuant to this Consent Decree. Neither the United  
12 States nor the State shall be held out as a party to any contract  
13 entered into by or on behalf of Settling Work Defendant in  
14 carrying out activities pursuant to this Consent Decree. Neither  
15 the Settling Work Defendant nor any such contractor shall be  
16 considered an agent of the United States or the State.

17           b. The United States and the State shall give  
18 Settling Work Defendant notice of any claim for which the United  
19 States or the State plans to seek indemnification pursuant to  
20 Paragraph 51.a and shall consult with Settling Work Defendant  
21 prior to settling such claim.

22           52. Settling Work Defendant waives all claims against the  
23 United States and the State for damages or reimbursement or for  
24 set-off of any payments made or to be made to the United States  
25 or the State, arising from or on account of any contract,  
26 agreement, or arrangement between Settling Work Defendant and any  
27 person for performance of Work on or relating to the Site  
28 including, but not limited to, claims on account of construction

1 delays. In addition, Settling Work Defendant shall indemnify and  
2 hold harmless the United States and the State with respect to any  
3 and all claims for damages or reimbursement arising from or on  
4 account of any contract, agreement, or arrangement between  
5 Settling Work Defendant and any person for performance of Work on  
6 or relating to the Site including, but not limited to, claims on  
7 account of construction delays.

8       53. No later than 15 days before commencing any on-site  
9 Work, Settling Work Defendant shall secure, and shall maintain,  
10 until the first anniversary of EPA's Certification of Completion  
11 of the Remedial Action pursuant to Paragraph 45.b of Section XIV  
12 (Certification of Completion), comprehensive general liability  
13 insurance with limits of one million dollars, combined single  
14 limit, and automobile liability insurance with limits of one  
15 million dollars, combined single limit, naming the United States  
16 and the State as additional insureds. In the alternative, other  
17 financial mechanisms or self-insurance may be substituted for  
18 comprehensive general liability insurance and automobile  
19 liability insurance. In addition, for the duration of this  
20 Consent Decree, Settling Work Defendant shall satisfy, or shall  
21 ensure that its contractors or subcontractors satisfy, all  
22 applicable laws and regulations regarding the provision of  
23 worker's compensation insurance for all persons performing the  
24 Work on behalf of Settling Work Defendant in furtherance of this  
25 Consent Decree. Prior to commencement of the Work under this  
26 Consent Decree, Settling Work Defendant shall provide to EPA and  
27 the State certificates of such insurance and a copy of each  
28 insurance policy, as applicable. Settling Work Defendant shall

1 resubmit such certificates and copies of policies each year on  
2 the anniversary of the effective date of this Consent Decree. If  
3 Settling Work Defendant demonstrates by evidence satisfactory to  
4 EPA and the State that any contractor or subcontractor maintains  
5 insurance equivalent to that described above, or insurance  
6 covering the same risks but in a lesser amount, then, with  
7 respect to that contractor or subcontractor, Settling Work  
8 Defendant need provide only that portion of the insurance  
9 described above that is not maintained by the contractor or  
10 subcontractor.

11 XVIII. FORCE MAJEURE

12 54. "Force majeure," for purposes of this Consent Decree,  
13 is defined as any event arising from causes beyond the control of  
14 Settling Work Defendant, of any entity controlled by Settling  
15 Work Defendant, or of Settling Work Defendant's contractors, that  
16 delays or prevents the performance of any obligation under this  
17 Consent Decree despite Settling Work Defendant's best efforts to  
18 fulfill the obligation. The requirement that the Settling Work  
19 Defendant exercise "best efforts to fulfill the obligation"  
20 includes using best efforts to anticipate any potential force  
21 majeure event and best efforts to address the effects of any  
22 potential force majeure event (1) as it is occurring and (2)  
23 following the potential force majeure event, such that the delay  
24 is minimized to the greatest extent possible. "Force Majeure"  
25 does not include financial inability to complete the Work or a  
26 failure to attain the Performance Standards.

27 55. If any event occurs or has occurred that may delay the  
28 performance of any obligation under this Consent Decree, whether

1 or not caused by a force majeure event, the Settling Work  
2 Defendant shall notify orally EPA's Project Coordinator or, in  
3 his or her absence, EPA's Alternate Project Coordinator or, in  
4 the event both of EPA's designated representatives are  
5 unavailable, the Director of the Superfund Division, EPA Region  
6 9, within 3 days of the time Settling Work Defendant first knew  
7 that the event might cause a delay. Within 10 days thereafter,  
8 Settling Work Defendant shall provide in writing to EPA and the  
9 State an explanation and description of the reasons for the  
10 delay; the anticipated duration of the delay; all actions taken  
11 or to be taken to prevent or minimize the delay; a schedule for  
12 implementation of any measures to be taken to prevent or mitigate  
13 the delay or the effect of the delay; the Settling Work  
14 Defendant's rationale for attributing such delay to a force  
15 majeure event if it intends to assert such a claim; and a  
16 statement as to whether, in the opinion of the Settling Work  
17 Defendant, such event may cause or contribute to an endangerment  
18 to public health, welfare or the environment. The Settling Work  
19 Defendant shall include with any notice all available  
20 documentation supporting its claim that the delay was  
21 attributable to a force majeure. Failure to comply with the  
22 above requirements shall preclude Settling Work Defendant from  
23 asserting any claim of force majeure for that event for the  
24 period of time of such failure to comply, and for any additional  
25 delay caused by such failure. Settling Work Defendant shall be  
26 deemed to know of any circumstance of which Settling Work  
27 Defendant, any entity controlled by Settling Work Defendant, or  
28 Settling Work Defendant's contractors knew or should have known.



1           56. If EPA, after a reasonable opportunity for review and  
2 comment by the State, agrees that the delay or anticipated delay  
3 is attributable to a force majeure event, the time for  
4 performance of the obligations under this Consent Decree that are  
5 affected by the force majeure event will be extended by EPA,  
6 after a reasonable opportunity for review and comment by the  
7 State, for such time as is necessary to complete those  
8 obligations. An extension of the time for performance of the  
9 obligations affected by the force majeure event shall not, of  
10 itself, extend the time for performance of any other obligation.  
11 If EPA, after a reasonable opportunity for review and comment by  
12 the State, does not agree that the delay or anticipated delay has  
13 been or will be caused by a force majeure event, EPA will notify  
14 the Settling Work Defendant in writing of its decision. If EPA,  
15 after a reasonable opportunity for review and comment by the  
16 State, agrees that the delay is attributable to a force majeure  
17 event, EPA will notify the Settling Work Defendant in writing of  
18 the length of the extension, if any, for performance of the  
19 obligations affected by the force majeure event.

20           57. If the Settling Work Defendant elects to invoke the  
21 dispute resolution procedures set forth in Section XIX (Dispute  
22 Resolution), it shall do so no later than 15 days after receipt  
23 of EPA's notice. In any such proceeding, Settling Work Defendant  
24 shall have the burden of demonstrating by a preponderance of the  
25 evidence that the delay or anticipated delay has been or will be  
26 caused by a force majeure event, that the duration of the delay  
27 or the extension sought was or will be warranted under the  
28 circumstances, that best efforts were exercised to avoid and

mitigate the effects of the delay, and that Settling Work Defendant complied with the requirements of Paragraphs 55 and 56. If Settling Work Defendant carries this burden, the delay at issue shall be deemed not to be a violation by Settling Work Defendant of the affected obligation of this Consent Decree identified to EPA and the Court.

XIX. DISPUTE RESOLUTION

58. Unless otherwise expressly provided in this Consent Decree, the dispute resolution procedures of this Section shall be the exclusive mechanism to resolve disputes arising under or with respect to this Consent Decree. However, the procedures set forth in this Section shall not apply to actions by the United States to enforce obligations of the Settling Work Defendant that have not been disputed in accordance with this Section.

59. Any dispute that arises under or with respect to this Consent Decree shall in the first instance be the subject of informal negotiations between the parties to the dispute. The period for informal negotiations shall not exceed 20 days from the time the dispute arises, unless it is modified by written agreement of the parties to the dispute. The dispute shall be considered to have arisen when one party sends the other parties a written Notice of Dispute.

60. a. In the event that the parties cannot resolve a dispute by informal negotiations under the preceding Paragraph, the position advanced by EPA shall be considered binding unless, within 7 days after the conclusion of the informal negotiation period, any Settling Defendant invokes the formal dispute resolution procedures of this Section by serving on the United

1 States and the State a written Statement of Position on the  
2 matter in dispute including, but not limited to, any factual  
3 data, analysis or opinion supporting that position and any  
4 supporting documentation relied upon by the Settling Defendant.  
5 The Statement of Position shall specify the Settling Defendant's  
6 position as to whether formal dispute resolution should proceed  
7 under Paragraph 61 or Paragraph 62.

8           b. Within 7 days after receipt of a Settling  
9 Defendant's Statement of Position, EPA will serve on such  
10 Settling Defendant its Statement of Position including, but not  
11 limited to, any factual data, analysis, or opinion supporting  
12 that position and all supporting documentation relied upon by  
13 EPA. EPA's Statement of Position shall include a statement as to  
14 whether formal dispute resolution should proceed under Paragraph  
15 61 or 62. Within 5 days after receipt of EPA's Statement of  
16 Position, the Settling Defendant may submit a Reply.

17           c. If there is disagreement between EPA and a  
18 Settling Defendant as to whether dispute resolution should  
19 proceed under Paragraph 61 or 62, the parties to the dispute  
20 shall follow the procedures set forth in the paragraph determined  
21 by EPA to be applicable. However, if a Settling Defendant  
22 ultimately appeals to the Court to resolve the dispute, the Court  
23 shall determine which paragraph is applicable in accordance with  
24 the standards of applicability set forth in Paragraphs 61 and 62.

25           61. Formal dispute resolution for disputes pertaining to  
26 the selection or adequacy of any response action and all other  
27 disputes that are accorded review on the administrative record  
28 under applicable principles of administrative law shall be

1 conducted pursuant to the procedures set forth in this Paragraph.  
2 For purposes of this Paragraph, the adequacy of any response  
3 action includes, without limitation: (1) the adequacy or  
4 appropriateness of plans, procedures to implement plans, or any  
5 other items requiring approval by EPA under this Consent Decree;  
6 and (2) the adequacy of the performance of response actions taken  
7 pursuant to this Consent Decree. Nothing in this Consent Decree  
8 shall be construed to allow any dispute by a Settling Defendant  
9 regarding the validity of the ROD's provisions.

10 a. An administrative record of the dispute shall be  
11 maintained by EPA and shall contain all statements of position,  
12 including supporting documentation, submitted pursuant to this  
13 Section. Where appropriate, EPA may allow submission of  
14 supplemental statements of position by the parties to the  
15 dispute.

16 b. The Director of the Superfund Division, EPA Region  
17 9, will issue a final administrative decision resolving the  
18 dispute based on the administrative record described in Paragraph  
19 61.a. This decision shall be binding upon the Settling  
20 Defendant, subject only to the right to seek judicial review  
21 pursuant to Paragraph 61.c and d.

22 c. Any administrative decision made by EPA pursuant  
23 to Paragraph 61.b shall be reviewable by this Court, provided  
24 that a motion for judicial review of the decision is filed by a  
25 Settling Defendant with the Court and served on all Parties  
26 within 10 days of receipt of EPA's decision. The motion shall  
27 include a description of the matter in dispute, the efforts made  
28 by the parties to resolve it, the relief requested, and the

1 schedule, if any, within which the dispute must be resolved to  
2 ensure orderly implementation of this Consent Decree. The United  
3 States may file a response to such Settling Defendant's motion.

4 d. In proceedings on any dispute governed by this  
5 Paragraph, a Settling Defendant shall have the burden of  
6 demonstrating that the decision of the Superfund Division  
7 Director is arbitrary and capricious or otherwise not in  
8 accordance with law. Judicial review of EPA's decision shall be  
9 on the administrative record compiled pursuant to Paragraph 61.a.

10 62. Formal dispute resolution for disputes that neither  
11 pertain to the selection or adequacy of any response action nor  
12 are otherwise accorded review on the administrative record under  
13 applicable principles of administrative law, including disputes  
14 under Paragraphs 9.a, 9.b and 39, shall be governed by this  
15 Paragraph.

16 a. Following receipt of the Settling Defendant's  
17 Statement of Position submitted pursuant to Paragraph 60.a, the  
18 Director of the Superfund Division, EPA Region 9, will issue a  
19 final decision resolving the dispute. The Superfund Division  
20 Director's decision shall be binding on the Settling Defendant  
21 unless, within 10 days of receipt of the decision, the Settling  
22 Defendant files with the Court and serves on the parties a motion  
23 for judicial review of the decision setting forth the matter in  
24 dispute, the efforts made by the parties to resolve it, the  
25 relief requested, and the schedule, if any, within which the  
26 dispute must be resolved to ensure orderly implementation of the  
27 Consent Decree. The United States may file a response to the  
28 Settling Defendant's motion.

1           b. Notwithstanding Paragraph M of Section I  
2 (Background) of this Consent Decree, judicial review of any  
3 dispute governed by this Paragraph shall be governed by  
4 applicable principles of law.

5           63. The invocation of formal dispute resolution procedures  
6 under this Section shall not extend, postpone or affect in any  
7 way any obligation of the Settling Work Defendant under this  
8 Consent Decree, not directly in dispute, unless EPA or the Court  
9 agrees otherwise. Stipulated penalties with respect to the  
10 disputed matter shall continue to accrue, but payment shall be  
11 stayed pending resolution of the dispute as provided in Paragraph  
12 72. Notwithstanding the stay of payment, stipulated penalties  
13 shall accrue from the first day of noncompliance with any  
14 applicable provision of this Consent Decree. In the event that  
15 the Settling Work Defendant does not prevail on the disputed  
16 issue, stipulated penalties shall be assessed and paid as  
17 provided in Section XX (Stipulated Penalties).

18                           XX. STIPULATED PENALTIES

19           64. Settling Defendants shall be liable for stipulated  
20 penalties in the amounts set forth in Paragraphs 65 and 66 to the  
21 United States, on behalf of the United States Environmental  
22 Protection Agency, for failure to comply with the requirements of  
23 this Consent Decree as specified below, unless excused under  
24 Section XVIII (Force Majeure). "Compliance" by the Settling Work  
25 Defendant shall include completion of the activities under this  
26 Consent Decree or any Work plan or other plan approved under this  
27 Consent Decree identified below, in accordance with all  
28 applicable requirements of law, this Consent Decree, the SOW, and

1 any plans or other documents approved by EPA pursuant to this  
2 Consent Decree and within the specified time schedules  
3 established by and approved under this Consent Decree.

4 65. a. The following stipulated penalties shall accrue  
5 per violation per day for any noncompliance identified in  
6 Subparagraph b, below:

7	<u>Penalty Per Violation</u> <u>Per Day</u>	<u>Period of Noncompliance</u>
8	\$ 1,000	1 - 7 days
	\$ 5,000	8 - 14 days
9	\$ 7,500	15 - 21 days
	\$10,000	22 - 28 days
10	\$20,000	29 - 35 days
	\$25,000	36 days and beyond

11  
12 b. Failure of Settling Work Defendant to submit the  
13 following documents or perform the following Work on time:  
14 Remedial Action Work Plan, RA Completion Report, Monthly Progress  
15 Reports, Weekly Construction Reports, and commencement of on-site  
16 construction activities according to the approved schedule.

17 66. The following stipulated penalties shall accrue per  
18 violation per day for failure to submit timely or adequate  
19 reports or other written documents other than those identified in  
20 Paragraph 65.b and for any other noncompliance with this Consent  
21 Decree:

22	<u>Penalty Per Violation</u> <u>Per Day</u>	<u>Period of Noncompliance</u>
23	\$ 300	1 - 7 days
	\$ 500	8 - 14 days
24	\$ 750	15 - 21 days
	\$1,000	22 days and beyond

25  
26 67. In the event that EPA assumes performance of a portion  
27 or all of the Work pursuant to Paragraph 80 of Section XXI  
28 (Covenants by the United States and the State), Settling Work

1 Defendant shall be liable for a stipulated penalty in the amount  
2 of \$50,000.

3       68. All penalties shall begin to accrue on the day after  
4 the complete performance is due or the day a violation occurs and  
5 shall continue to accrue through the final day of the correction  
6 of the noncompliance or completion of the activity. However,  
7 stipulated penalties shall not accrue (1) with respect to a  
8 deficient submission under Section XI (EPA Approval of Plans and  
9 Other Submissions), during the period, if any, beginning on the  
10 31st day after EPA's receipt of such submission until the date  
11 that EPA notifies Settling Work Defendant of any deficiency; (2)  
12 with respect to a decision by the Director of the Superfund  
13 Division, EPA Region 9, under Paragraph 61.b or 62.a of Section  
14 XIX (Dispute Resolution), during the period, if any, beginning on  
15 the 21st day after the date that Settling Work Defendant's reply  
16 to EPA's Statement of Position is received until the date that  
17 the Director issues a final decision regarding such dispute; or  
18 (3) with respect to judicial review by this Court of any dispute  
19 under Section XIX (Dispute Resolution), during the period, if  
20 any, beginning on the 31st day after the Court's receipt of the  
21 final submission regarding the dispute until the date that the  
22 Court issues a final decision regarding such dispute. Nothing  
23 herein shall prevent the simultaneous accrual of separate  
24 penalties for separate violations of this Consent Decree.

25       69. Following EPA's determination that Settling Work  
26 Defendant has failed to comply with a requirement of this Consent  
27 Decree, EPA may give Settling Work Defendant written notification  
28 of the same and describe the noncompliance. EPA may send the



1 Settling Work Defendant a written demand for the payment of the  
2 penalties. However, penalties shall accrue as provided in the  
3 preceding Paragraph regardless of whether EPA has notified the  
4 Settling Work Defendant of a violation.

5       70. All penalties accruing under this Section shall be due  
6 and payable to the United States within 30 days of the Settling  
7 Work Defendant's receipt from EPA of a demand for payment of the  
8 penalties, unless the Settling Work Defendant invokes the dispute  
9 Resolution procedures under Section XIX (Dispute Resolution).  
10 All payments to the United States under this section shall be  
11 paid by certified or cashier's check(s) made payable to "EPA  
12 Hazardous Substances Superfund," shall be mailed to Region IX,  
13 Attention: Superfund Accounting, P.O. Box 360863 A, Pittsburgh,  
14 PA 15251, shall indicate that the payment is for stipulated  
15 penalties, and shall reference EPA Region 9 and Site/Spill ID No.  
16 0921, the DOJ Case Number 90-11-2-355, and the name and address  
17 of the party or parties making payment. Copies of check(s)  
18 tendered pursuant to this Section, and any accompanying  
19 transmittal letter(s), shall be sent to the United States as  
20 provided in Section XXVI (Notices and Submissions).

21       71. The payment of penalties shall not alter in any way  
22 Settling Work Defendant's obligation to complete the performance  
23 of the Work required under this Consent Decree.

24       72. Penalties shall continue to accrue as provided in  
25 Paragraph 68 during any dispute resolution period, but need not  
26 be paid until the following:

27           a. If the dispute is resolved by agreement or by a  
28 decision of EPA that is not appealed to this Court, accrued

1 penalties determined to be owing shall be paid to EPA within 15  
2 days of the agreement or the receipt of EPA's decision or order;

3           b. If the dispute is appealed to this Court and the  
4 United States prevails in whole or in part, the Settling Work  
5 Defendant shall pay all accrued penalties determined by the Court  
6 to be owing to EPA within 60 days of receipt of the Court's  
7 decision or order, except as provided in subparagraph c, below;

8           c. If the District Court's decision is appealed by  
9 any Party, the Settling Work Defendant shall pay all accrued  
10 penalties determined by the District Court to be owing to the  
11 United States or the State into an interest-bearing escrow  
12 account within 60 days of receipt of the Court's decision or  
13 order. Penalties shall be paid into this account as they  
14 continue to accrue, at least every 60 days. Within 15 days of  
15 receipt of the final appellate court decision, the escrow agent  
16 shall pay the balance of the account to EPA or to the Settling  
17 Work Defendant to the extent that it prevails.

18           73. . a. If the Settling Work Defendant fails to pay  
19 stipulated penalties when due, the United States may institute  
20 proceedings to collect the penalties, as well as interest. The  
21 Settling Work Defendant shall pay Interest on the unpaid balance,  
22 which shall begin to accrue on the date of demand made pursuant  
23 to Paragraph 70.

24           b. Nothing in this Consent Decree shall be construed  
25 as prohibiting, altering, or in any way limiting the ability of  
26 the United States to seek any other remedies or sanctions  
27 available by virtue of a Settling Defendant's violation of this  
28 Consent Decree or of the statutes and regulations upon which it

1 is based including, but not limited to, penalties pursuant to  
2 Section 122(1) of CERCLA, 42 U.S.C. § 9622(1). Provided, however,  
3 that the United States shall not seek civil penalties pursuant to  
4 Section 122(1) of CERCLA for any violation for which a stipulated  
5 penalty is provided herein, except in the case of a willful  
6 violation of the Consent Decree.

7 74. Notwithstanding any other provision of this Section,  
8 the United States may, in its unreviewable discretion, waive any  
9 portion of stipulated penalties that have accrued pursuant to  
10 this Consent Decree.

11 XXI. COVENANTS BY THE UNITED STATES AND THE STATE

12 75. a. In consideration of the actions that will be  
13 performed by the Settling Work Defendant under the terms of this  
14 Consent Decree, and except as specifically provided in Paragraphs  
15 76, 77, 79.a and 79.c of this Section, the United States and the  
16 State covenant not to sue or to take administrative action  
17 pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606,  
18 9607(a), and Section 7003 of RCRA, 42 U.S.C. § 6973, or Chapter  
19 6.8 of the California Health & Safety Code, Sections 25300 et  
20 seq., against the Settling Work Defendant, Chevron Corporation,  
21 Chevron Capital U.S.A. Inc., Chevron Chemical Company, Chevron  
22 Oil Finance Company, Chevron Pipe Line Company, Huntington Beach  
23 Company and The Pittsburg & Midway Coal Mining Company, relating  
24 to the Site and Natural Resource Damages, provided that none of  
25 the foregoing persons or entities has liability with respect to  
26 the Site independent of that person's or that entity's  
27 affiliation with the Settling Work Defendant. Except with  
28 respect to future liability, these covenants not to sue or take

1 administrative action shall take effect for Settling Work  
2 Defendant upon the Date of Entry of this Consent Decree. With  
3 respect to future liability, these covenants not to sue shall  
4 take effect upon the Certification of Completion of Remedial  
5 Action by EPA pursuant to Paragraph 45.b of Section XIV  
6 (Certification of Completion). These covenants not to sue or  
7 take administrative action are conditioned upon satisfactory  
8 performance by Settling Work Defendant of its obligations under  
9 this Consent Decree. These covenants not to sue extend only to  
10 the persons or entities identified in this subparagraph and do  
11 not extend to any other person or entity.

12           b. In consideration of the payments made and costs  
13 incurred to date, including payments made pursuant to the AOC or  
14 UAO by each Settling Cash Defendant, and payments that will be  
15 made by each Settling Cash Defendant, and except as specifically  
16 provided in Paragraphs 76, 77. 79.b and 79.c of this Section, the  
17 United States and the State covenant not to sue or to take  
18 administrative action pursuant to Sections 106 and 107(a) of  
19 CERCLA, 42 U.S.C. §§ 9606, 9607(a), and Section 7003 of RCRA,  
20 42 U.S.C. § 6973, or Chapter 6.8 of the California Health &  
21 Safety Code, Sections 25300 et seq., against the Settling Cash  
22 Defendants, their respective present and former officers,  
23 directors, agents or employees, or their respective successors  
24 and assigns, relating to the Site and Natural Resource Damages,  
25 provided that none of the foregoing persons or entities has  
26 liability with respect to the Site independent of that person's  
27 or that entity's affiliation with a Settling Cash Defendant.  
28 Except with respect to future liability, these covenants not to

1 sue or take administrative action shall take effect for each  
2 Settling Cash Defendant upon the Date of Entry of this Consent  
3 Decree. With respect to future liability, these covenants not to  
4 sue or take administrative action shall take effect upon the  
5 Certification of Completion of Remedial Action by EPA pursuant to  
6 Paragraph 45.b of Section XIV (Certification of Completion).  
7 These covenants are conditioned upon the satisfaction by each  
8 individual Settling Cash Defendant of its payment obligations  
9 under this Consent Decree. These covenants extend only to the  
10 persons or entities identified in this subparagraph and do not  
11 extend to any other person. The payment by each individual  
12 Settling Cash Defendant of its requisite amount in accordance  
13 with Paragraph 49.a, along with amounts previously paid or costs  
14 incurred under the AOC or UAO, shall constitute full performance  
15 of its individual monetary obligations under this Consent Decree  
16 and thereby entitle it to these covenants.

17 c. In consideration of the payments that will be made  
18 by and on behalf of the Settling Federal Agencies, and except as  
19 specifically provided in Paragraphs 76, 77, 79.b and 79.c of this  
20 Section, the State covenants not to sue or take administrative  
21 action, and EPA covenants not to take administrative action  
22 pursuant to Sections 106 and 107(a) of CERCLA, 42 U.S.C. §§ 9606,  
23 9607(a), and Section 7003 of RCRA, 42 U.S.C. § 6973; or Chapter  
24 6.8 of the California Health & Safety Code, Sections 25300 et  
25 seq., against the Settling Federal Agencies relating to the Site  
26 and Natural Resources Damages. Except with respect to future  
27 liability, these covenants not to sue or take administrative  
28 action shall take effect for the Settling Federal Agencies upon

1 the Date of Entry of this Consent Decree. With respect to future  
2 liability, these covenants not to sue or take administrative  
3 action shall take effect upon the Certification of Completion of  
4 Remedial Action by EPA pursuant to Paragraph 45.b of Section XIV  
5 (Certification of Completion). These covenants are conditioned  
6 upon the satisfaction by and on behalf of the Settling Federal  
7 Agencies of their payment obligations under this Consent Decree.  
8 These covenants extend only to entities identified in this  
9 subparagraph and do not extend to any other person. The payments  
10 by and on behalf of the Settling Federal Agencies of the  
11 requisite amounts in accordance with Paragraph 49.b, along with  
12 amounts previously paid or costs incurred under the AOC or UAO,  
13 shall constitute full performance of their obligations under this  
14 Consent Decree and thereby entitle them to these covenants.

15 76. United States' Pre-certification Reservations

16 a. Notwithstanding any other provision of this Consent  
17 Decree, the United States and the State reserve, and this Consent  
18 Decree is without prejudice to, the right to institute  
19 proceedings in this action or in a new action against the  
20 Settling Defendants (and, in the case of the State, against the  
21 Settling Federal Agencies), or to issue an administrative order  
22 to the Settling Federal Agencies, compelling Settling Defendants  
23 or the Settling Federal Agencies (1) to perform further response  
24 actions relating to the Site, or (2) to reimburse the United  
25 States and the State for additional costs of response if, prior  
26 to Certification of Completion of the Remedial Action

27 (i) conditions at the Site, previously unknown to EPA,  
28 are discovered, or

(ii) information, previously unknown to EPA, is received, in whole or in part, and these previously unknown conditions or information together with any other relevant information indicates that the Remedial Action is not protective of human health or the environment.

b. In the event EPA or the State exercises the rights reserved in Paragraph 76.a and issues an administrative order seeking to compel the Settling Federal Agencies to take any action with respect to the Site, the Settling Work Defendant agrees to indemnify the Settling Federal Agencies for any and all costs and expenses incurred in, or otherwise associated with, complying with the administrative order. The Settling Federal Agencies shall notify the Settling Work Defendant as expeditiously as possible, but no later than thirty days after receiving an administrative order or, if a compliance date is specified in the administrative order, then the notice shall be no later than five days before the expiration of the compliance date.

77. United States' Post-certification Reservations

a. Notwithstanding any other provision of this Consent Decree, the United States and the State reserve, and this Consent Decree is without prejudice to, the right to institute proceedings in this action or in a new action against the Settling Defendants (and, in the case of the State, against the Settling Federal Agencies), or to issue an administrative order to the Settling Federal Agencies, compelling Settling Defendants or the Settling Federal Agencies (1) to perform further response actions relating to the Site, or (2) to reimburse the United

1 States for additional costs of response if, subsequent to  
2 Certification of Completion of the Remedial Action

3 (i) conditions at the Site, previously unknown to EPA,  
4 are discovered, or

5 (ii) information, previously unknown to EPA, is  
6 received, in whole or in part,

7 and these previously unknown conditions or information together  
8 with other relevant information indicates that the Remedial  
9 Action is not protective of human health or the environment.

10 b. In the event EPA or the State exercises the rights  
11 reserved in Paragraph 77.a and issues an administrative order  
12 seeking to compel the Settling Federal Agencies to take any  
13 action with respect to the Site, the Settling Work Defendant  
14 agrees to indemnify the Settling Federal Agencies for any and all  
15 costs and expenses incurred in, or otherwise associated with,  
16 complying with the administrative order. The Settling Federal  
17 Agencies shall notify the Settling Work Defendant as  
18 expeditiously as possible but no later than thirty days after  
19 receiving an administrative order or, if a compliance date is  
20 specified in the administrative order, then the notice shall be  
21 no later than five days before the expiration of the compliance  
22 date.

23 78. For purposes of Paragraph 76, the information and the  
24 conditions known to EPA shall include only that information and  
25 those conditions known to EPA as of the date the ESD was signed  
26 and set forth in the ESD, the ROD, and the administrative records  
27 supporting the ESD and the ROD. For purposes of Paragraph 77,  
28 the information and the conditions known to EPA shall include



1 only that information and those conditions known to EPA as of the  
2 date of Certification of Completion of the Remedial Action and  
3 set forth in the ESD, the ROD, the administrative records  
4 supporting the ESD and the ROD, and the post-ROD administrative  
5 record, or in any information received by EPA pursuant to the  
6 requirements of this Consent Decree prior to Certification of  
7 Completion of the Remedial Action.

8 79. a. General Reservations of Rights as to Settling Work  
9 Defendant

10 The covenants not to sue set forth above do not pertain to  
11 any matters other than those expressly specified in Paragraph  
12 75.a. Plaintiffs reserve, and this Consent Decree is without  
13 prejudice to, all rights against Settling Work Defendant with  
14 respect to all other matters including, but not limited to, the  
15 following:

- 16 (1) claims based on a failure by Settling Work  
17 Defendant to meet a requirement of this Consent Decree;
- 18 (2) liability arising from the past, present, or future  
19 disposal, release, or threat of release of Waste  
20 Materials which occurs or occurred outside of the Site;
- 21 (3) liability of Settling Work Defendant for its future  
22 disposal of Waste Material at the Site, other than as  
23 provided in the ROD, the ESD, the SOW, or as otherwise  
24 ordered by EPA;
- 25 (4) criminal liability;
- 26 (5) liability for violations of federal or state law  
27 that occur during the performance of the Work or the  
28 Remedial Action; and
- (6) liability, prior to Certification of Completion of

the Remedial Action, for additional response actions that EPA determines are necessary to achieve Performance Standards, but that cannot be required pursuant to Paragraph 12 (Modification of the SOW or Related Work Plans).

b. General Reservations of Rights as to Settling Cash Defendants and Settling Federal Agencies

With respect to each Settling Cash Defendant and each Settling Federal Agency, the covenants not to sue set forth above do not pertain to any matters other than those expressly specified in Paragraphs 75.b and 75.c. Plaintiffs reserve, and this Consent Decree is without prejudice to, all rights against each Settling Cash Defendant, and the State and EPA reserve, and this Consent Decree is without prejudice to, all rights against each Settling Federal Agency, with respect to all other matters. These reservations include, but are not limited to, the following:

- (1) claims based on a failure to meet one of its requirements under this Consent Decree;
- (2) liability arising from the past, present, or future disposal, release, or threat of release of Waste Materials which occur or occurred outside of the Site and which did not emanate from the Site;
- (3) liability of a Settling Cash Defendant or a Settling Federal Agency for its future disposal of Waste Material at the Site, other than as provided in the ROD, the ESD, the SOW, or as otherwise ordered by EPA; and

(4) criminal liability.

c. Reservations concerning Natural Resource Injury

Notwithstanding any other provision of this Consent Decree, the United States, on behalf of its natural resource trustees, and the State reserve all rights against Settling Defendants and the Settling Federal Agencies with respect to liability for Natural Resource Damages, based on (1) conditions with respect to the Site, unknown to the United States or the State at the date of lodging of this Consent Decree, that result in releases of hazardous substances that contribute to injury to, destruction of, or loss of Natural Resources, or (2) information received after the date of lodging of this Consent Decree that indicates that there is injury to, destruction of, or loss of Natural Resources of a type that was unknown, or of a magnitude greater than was known, to the United States or the State at the date of lodging of this Consent Decree.

80. Work Takeover. In the event EPA determines that Settling Work Defendant has ceased implementation of any portion of the Work, is seriously or repeatedly deficient or late in its performance of the Work, or is implementing the Work in a manner that may cause an endangerment to human health or the environment, EPA may assume the performance of all or any portions of the Work as EPA determines necessary. Settling Work Defendant may invoke the procedures set forth in Section XIX (Dispute Resolution), Paragraph 61 (record review), to dispute EPA's determination that takeover of the Work is warranted under this Paragraph. Settling Work Defendant shall pay all costs incurred by the United States in performing the Work pursuant to

1 this Paragraph.

2 81. Notwithstanding any other provision of this Consent  
3 Decree, the United States and the State retain all authority and  
4 reserve all rights to take any and all response actions  
5 authorized by law.

6 XXII. COVENANTS BY SETTLING DEFENDANTS

7 82. Covenant Not to Sue. Subject to the reservations in  
8 Paragraph 83, Settling Defendants hereby covenant not to sue and  
9 agree not to assert any claims or causes of action against the  
10 United States or DTSC and those State agencies that are Settling  
11 Cash Defendants, with respect to the Site including, but not  
12 limited to:

13 a. any direct or indirect claim for reimbursement  
14 from the Hazardous Substance Superfund (established pursuant to  
15 the Internal Revenue Code, 26 U.S.C. § 9507) through CERCLA  
16 Sections 106(b)(2), 107, 111, 112, or 113, 42 U.S.C. §§  
17 9606(b)(2), 9607, 9611, 9612, 9613, or any other provision of  
18 law;

19 b. any claims against the United States or DTSC and  
20 those State agencies that are Settling Cash Defendants, under  
21 CERCLA Sections 107 or 113, 42 U.S.C. §§ 9607, 9613, related to  
22 the Site; or

23 c. any claims arising out of response activities at  
24 the Site, including claims based on EPA's and the State's  
25 selection of response actions, oversight of response activities  
26 and approval of plans for such activities.

27 83. The Settling Defendants reserve, and this Consent  
28 Decree is without prejudice to, claims against the United States,

1 subject to the provisions of Chapter 171 of Title 28 of the  
2 United States Code, for money damages for injury or loss of  
3 property or personal injury or death caused by the negligent or  
4 wrongful act or omission of any employee of the United States  
5 while acting within the scope of his office or employment under  
6 circumstances where the United States, if a private person, would  
7 be liable to the claimant in accordance with the law of the place  
8 where the act or omission occurred. However, any such claim  
9 shall not include a claim for any damages caused, in whole or in  
10 part, by the act or omission of any person, including any  
11 contractor, who is not a federal employee as that term is defined  
12 in 28 U.S.C. § 2671, nor shall any such claim include a claim  
13 based on EPA's selection of response actions, or the oversight or  
14 approval of the Settling Defendants' plans or activities. The  
15 foregoing applies only to claims that are brought pursuant to any  
16 statute other than CERCLA and for which the waiver of sovereign  
17 immunity is found in a statute other than CERCLA.

18 84. Nothing in this Consent Decree shall be deemed to  
19 constitute pre-authorization of a claim within the meaning of  
20 Section 111 of CERCLA, 42 U.S.C. § 9611, or 40 C.F.R.  
21 § 300.700(d).

22 85. Defendants agree to waive all claims or causes of  
23 action that they may have for all matters relating to the Site,  
24 including for contribution, against each other individual  
25 Defendant, except for any failure by any other individual  
26 Defendant to meet one of its obligations under this Consent  
27 Decree.

28

XXIII. EFFECT OF SETTLEMENT; CONTRIBUTION PROTECTION

86. Nothing in this Consent Decree shall be construed to create any rights in, or grant any cause of action to, any person not a Party to this Consent Decree. The preceding sentence shall not be construed to waive or nullify any rights that any person not a signatory to this Consent Decree may have under applicable law. Each of the Parties expressly reserves any and all rights (including, but not limited to, any right to contribution), defenses, claims, demands, and causes of action that each Party may have with respect to any matter, transaction, or occurrence relating in any way to the Site against any person not a Party hereto.

87. The Parties agree, and by entering this Consent Decree this Court finds, that the Settling Work Defendant, Settling Cash Defendants, and Settling Federal Agencies are entitled, as of the effective date of this Consent Decree, to protection from contribution actions or claims as provided by CERCLA Section 113(f)(2), 42 U.S.C. § 9613(f)(2), for matters addressed in this Consent Decree. The "matters addressed" in this Consent Decree are all response actions taken or to be taken and all response costs incurred or to be incurred by the United States, the State, or any other person with respect to the Site. The "matters addressed" in this Consent Decree shall not include those response costs or response actions as to which the Plaintiffs have reserved their rights under this Consent Decree (except for claims for failure to comply with this Consent Decree), in the event that the Plaintiffs assert rights against the Defendants coming within the scope of such reservations.

1        88. The Settling Defendants and Settling Federal Agencies  
2 agree that they cannot bring an action for contribution against  
3 any non-settling party unless the EPA and the State have declined  
4 to bring an action against that party. Settling Defendants shall  
5 notify the United States and the State of their desire to bring  
6 such an action in writing and allow the United States or the  
7 State 60 days to file an action first. Only if both the United  
8 States and the State decline to bring an action may any Settling  
9 Defendants bring an action.

10       89. The Settling Defendants also agree that, with respect  
11 to any suit or claim for contribution brought against them for  
12 matters related to this Consent Decree, they will notify in  
13 writing the United States and the State within 10 days of service  
14 of the Complaint on them. In addition, Settling Defendants shall  
15 notify the United States and the State within 10 days of service  
16 or receipt of any Motion for Summary Judgment and within 10 days  
17 of receipt of any order from a court setting a case for trial.

18       90. In any subsequent administrative or judicial proceeding  
19 initiated by the United States or the State for injunctive  
20 relief, or other appropriate relief relating to the Site, or  
21 Natural Resource Damages, Settling Defendants shall not assert,  
22 and may not maintain, any defense or claim based upon the  
23 principles of waiver, res judicata, collateral estoppel, issue  
24 preclusion, claim-splitting, or other defenses based upon any  
25 contention that the claims raised by the United States or the  
26 State in the subsequent proceeding were or should have been  
27 brought in the instant case; provided, however, that nothing in  
28 this Paragraph affects the enforceability of the covenants not to

1 sue set forth in Section XXI (Covenants by the United States and  
2 the State).

3 XXIV. ACCESS TO INFORMATION

4 91. Settling Work Defendant shall provide to EPA and the  
5 State, upon request, copies of all documents and information  
6 within its possession or control or that of its contractors or  
7 agents relating to activities at the Site or to the  
8 implementation of this Consent Decree including, but not limited  
9 to, sampling, analysis, chain-of-custody records, manifests,  
10 trucking logs, receipts, reports, sample traffic routing,  
11 correspondence, or other documents or information related to the  
12 Work. Settling Work Defendant shall also make available to EPA  
13 and the State, for purposes of investigation, information  
14 gathering, or testimony, their employees, agents, or  
15 representatives with knowledge of relevant facts concerning the  
16 performance of the Work.

17 92. a. Settling Work Defendant may assert business  
18 confidentiality claims covering part or all of the documents or  
19 information submitted to Plaintiffs under this Consent Decree to  
20 the extent permitted by and in accordance with Section 104(e)(7)  
21 of CERCLA, 42 U.S.C. § 9604(e)(7), and 40 C.F.R. § 2.203(b).  
22 Documents or information determined to be confidential by EPA  
23 will be afforded the protection specified in 40 C.F.R. Part 2,  
24 Subpart B. If no claim of confidentiality accompanies documents  
25 or information when they are submitted to EPA and the State, or  
26 if EPA has notified Settling Work Defendant that the documents or  
27 information are not confidential under the standards of  
28 Section 104(e)(7) of CERCLA, the public may be given access to



1 such documents or information without further notice to Settling  
2 Work Defendant.

3       b. Settling Work Defendant may assert that certain  
4 documents, records and other information are privileged under ~~the~~  
5 attorney-client privilege or any other privilege recognized by  
6 federal law. If the Settling Work Defendant asserts such a  
7 privilege in lieu of providing documents, it shall provide the  
8 Plaintiffs with the following: (1) the title of the document,  
9 record, or information; (2) the date of the document, record, or  
10 information; (3) the name and title of the author of the  
11 document, record, or information; (4) the name and title of each  
12 addressee and recipient; (5) a description of the contents of the  
13 document, record, or information; and (6) the privilege asserted  
14 by Settling Work Defendant. However, no documents, reports or  
15 other information created or generated pursuant to the  
16 requirements of this Consent Decree shall be withheld on the  
17 grounds that it is privileged.

18       93. No claim of confidentiality shall be made with respect  
19 to any data including, but not limited to, all sampling,  
20 analytical, monitoring, hydrogeologic, scientific, chemical, or  
21 engineering data, or any other documents or information  
22 evidencing conditions at or around the Site.

23                   XXV. RETENTION OF RECORDS

24       94. a. Until 10 years after Settling Work Defendant  
25 receives EPA's notification pursuant to Paragraph 46.b of Section  
26 XIV (Certification of Completion), the Settling Work Defendant  
27 shall preserve and retain all records and documents now in its  
28 possession or control or that come into its possession or control

1 that relate in any manner to the performance of the Work or  
2 liability of any person for response actions conducted and to be  
3 conducted at the Site, regardless of any document retention  
4 policy to the contrary. Until 10 years after Settling Work  
5 Defendant receives EPA's notification pursuant to Paragraph 46.b  
6 of Section XIV (Certification of Completion), Settling Work  
7 Defendant shall also instruct its contractors and agents to  
8 preserve all documents, records, and information of whatever  
9 kind, nature or description relating to the performance of the  
10 Work.

11 b. Until 10 years after the Date of Entry of this Consent  
12 Decree, Settling Cash Defendants shall preserve and retain all  
13 records and documents now in their possession or control or that  
14 come into their possession or control that relate in any manner  
15 to liability of any person for response actions conducted and to  
16 be conducted at the Site, regardless of any document retention  
17 policy to the contrary.

18 95. At the conclusion of this document retention period,  
19 Settling Work Defendant shall notify the United States and the  
20 State at least 90 days prior to the destruction of any such  
21 records or documents and, upon request by the United States or  
22 the State, Settling Work Defendant shall deliver any such records  
23 or documents to EPA or the State. The Settling Work Defendant  
24 may assert that certain documents, records and other information  
25 are privileged under the attorney-client privilege or any other  
26 privilege recognized by federal law. If the Settling Work  
27 Defendant asserts such a privilege, it shall provide Plaintiffs  
28 with the following: (1) the title of the document, record, or

1 information; (2) the date of the document, record, or  
2 information; (3) the name and title of the author of the  
3 document, record, or information; (4) the name and title of each  
4 addressee and recipient; (5) a description of the subject of the  
5 document, record, or information; and (6) the privilege asserted  
6 by the Settling Work Defendant. However, no documents, reports  
7 or other information created or generated pursuant to the  
8 requirements of the Consent Decree shall be withheld on the  
9 grounds that it is privileged.

10 96. The Settling Work Defendant hereby certifies that, to  
11 the best of its knowledge and belief, after thorough inquiry, it  
12 has not altered, mutilated, discarded, destroyed or otherwise  
13 disposed of any records, documents or other information relating  
14 to its potential liability regarding the Site since notification  
15 of potential liability by the United States or the State or the  
16 filing of suit against it regarding the Site and that it has  
17 fully complied with any and all EPA requests for information  
18 pursuant to Section 104(e) and 122(e) of CERCLA, 42 U.S.C. §§  
19 9604(e), 9622(e), and Section 3007 of RCRA, 42 U.S.C. § 6927.

20 97. Each Settling Federal Agency hereby certifies that  
21 (1) it has complied, and will continue to comply, with all  
22 applicable federal record retention laws, regulations, and  
23 policies; (2) to the best of its knowledge and belief, after  
24 reasonable inquiry, it has not altered, mutilated, discarded,  
25 destroyed or otherwise disposed of any records, documents or  
26 other information relating to its potential liability regarding  
27 the Site since notification of potential liability by EPA or the  
28 State; and (3) it has fully complied with any and all EPA and

1 State requests for information pursuant to Section 104(e) and  
2 122(e) of CERCLA, 42 U.S.C. §§ 9604(e) and 9622(e), and Section  
3 3007 of RCRA, 42 U.S.C. § 6927.

4 XXVI. NOTICES AND SUBMISSIONS

5 98. Whenever, under the terms of this Consent Decree,  
6 written notice is required to be given or a report or other  
7 document is required to be sent by one Party to another, it shall  
8 be directed to the individuals at the addresses specified below,  
9 unless those individuals or their successors give notice of a  
10 change to the other Parties in writing. All notices and  
11 submissions shall be considered effective upon receipt, unless  
12 otherwise provided in this Consent Decree. Written notice as  
13 specified herein shall constitute complete satisfaction of any  
14 written notice requirement of the Consent Decree with respect to  
15 the United States, EPA, the Settling Federal Agencies, the State,  
16 the Settling Work Defendant, and the Settling Cash Defendants,  
17 respectively.

18 As to the United States:

19 Chief, Environmental Enforcement Section  
20 Environment and Natural Resources Division  
21 U.S. Department of Justice  
22 P.O. Box 7611  
23 Ben Franklin Station  
24 Washington, D.C. 20044-7611  
25 Re: DOJ # 90-11-2-355

26 David B. Glazer, Esq.  
27 U.S. Department of Justice  
28 301 Howard Street, Suite 870  
San Francisco, California 94105

Chief, Environmental Defense Section  
United States Department of Justice  
Environment and Natural Resources Division  
P.O. Box 23986  
Washington D.C. 20026-3986  
Re: DOJ # 90-11-3-796

1 Rose Marie Caraway  
EPA Project Coordinator  
2 United States Environmental Protection  
Agency - Region 9  
3 75 Hawthorne Street  
San Francisco, California 94105

4 and

5 Director, Superfund Division  
6 United States Environmental Protection  
Agency - Region 9  
7 75 Hawthorne Street  
San Francisco, California 94105

8 As to the State:

9 Emmanuel Kwasi Mensh  
10 State Project Coordinator  
California Environmental Protection Agency  
11 Department of Toxic Substances Control  
Site Mitigation Branch  
12 10151 Croydon Way, Suite 3  
Sacramento, California 95827

13 As to the Settling Work Defendant:

14 Chevron USA Inc.  
15 555 Market Street  
San Francisco, CA 94105  
16 Attention: General Counsel

17 As to the Settling Cash Defendants:

18 As set forth on the signature pages to this Consent Decree.

19 XXVII. EFFECTIVE DATE

20 99. The effective date of this Consent Decree shall be the  
21 Date of Entry of this Consent Decree, except as otherwise  
22 provided herein.

23 XXVIII. RETENTION OF JURISDICTION

24 100. This Court retains jurisdiction over both the subject  
25 matter of this Consent Decree and the Parties for the duration of  
26 the performance of the terms and provisions of this Consent  
27 Decree for the purpose of enabling any of the Parties to  
28 apply to the Court at any time for such further order, direction,

1 and relief as may be necessary or appropriate for the  
2 construction or modification of this Consent Decree, or to  
3 effectuate or enforce compliance with its terms, or to resolve  
4 disputes in accordance with Section XIX (Dispute Resolution).

5 XXIX. APPENDICES

6 101. The following appendices are attached to and  
7 incorporated into this Consent Decree:

8 "Appendix A" is the ROD.

9 "Appendix B" is the ESD.

10 "Appendix C" is the SOW.

11 "Appendix D" is the description and map of the Site.

12 "Appendix E" is the UAO and related SOWs.

13 "Appendix F" is the complete list of the Settling Cash  
14 Defendants.

15 "Appendix G" is the list of Settling Federal Agencies.

16 XXX. COMMUNITY RELATIONS

17 102. Settling Work Defendant shall propose to EPA and the  
18 State its participation in the community relations plan to be  
19 developed by EPA. EPA will determine the appropriate role for  
20 the Settling Work Defendant under the Plan. Settling Work  
21 Defendant shall also cooperate with EPA and the State in  
22 providing information regarding the Work to the public. As  
23 requested by EPA or the State, Settling Work Defendant shall  
24 participate in the preparation of such information for  
25 dissemination to the public and in public meetings that may be  
26 held or sponsored by EPA or the State to explain activities at or  
27 relating to the Site.

28

1 XXXI. MODIFICATION

2 103. Schedules specified in this Consent Decree for  
3 completion of the Work may be modified by agreement of EPA and  
4 the Settling Work Defendant. All such modifications shall be  
5 made in writing.

6 104. Except as provided in Paragraph 12 ("Modification of  
7 the SOW or Related Work Plans"), no material modifications shall  
8 be made to the SOW without written notification to and written  
9 approval of the United States and the Settling Work Defendant.  
10 Prior to providing its approval to any modification, the United  
11 States will provide the State with a reasonable opportunity to  
12 review and comment on the proposed modification. Modifications  
13 to the SOW that do not materially alter that document may be made  
14 by written agreement between EPA, after providing the State with  
15 a reasonable opportunity to review and comment on the proposed  
16 modification, and Settling Work Defendant.

17 105. Nothing in this Decree shall be deemed to alter the  
18 Court's power to enforce, supervise or approve modifications to  
19 this Consent Decree.

20 XXXII. LODGING AND OPPORTUNITY FOR PUBLIC COMMENT

21 106. This Consent Decree shall be lodged with the Court for  
22 a period of not less than 30 days for public notice and comment  
23 in accordance with Section 122(d)(2) of CERCLA, 42 U.S.C.  
24 § 9622(d)(2), and 28 C.F.R. § 50.7. The United States reserves  
25 the right to withdraw or withhold its consent if the comments  
26 regarding this Consent Decree disclose facts or considerations  
27 that indicate that the Consent Decree is inappropriate, improper,  
28 or inadequate. Settling Defendants consent to the entry of this

1 Consent Decree without further notice.

2 107. If for any reason the Court should decline to approve  
3 this Consent Decree in the form presented, this agreement is  
4 voidable at the sole discretion of any Party, and the terms of  
5 the agreement may not be used as evidence in any litigation  
6 between the Parties.

7 XXXIII. SIGNATORIES/SERVICE

8 108. Each undersigned representative of a Party to this  
9 Consent Decree certifies that he or she is fully authorized to  
10 enter into the terms and conditions of this Consent Decree and to  
11 execute and legally bind such Party to this document.

12 109. Each Defendant hereby agrees not to oppose entry of  
13 this Consent Decree by this Court or to challenge any provision  
14 of this Consent Decree unless the United States has notified the  
15 Defendant in writing that it no longer supports entry of the  
16 Consent Decree.

17 110. Each Settling Defendant shall identify, on the  
18 attached signature page, the name, address and telephone number  
19 of an agent who is authorized to accept service of process by  
20 mail on behalf of that Party with respect to all matters arising  
21 under or relating to this Consent Decree. Settling Defendants  
22 hereby agree to accept service in that manner and to waive the  
23 formal service requirements set forth in Rule 4 of the Federal  
24 Rules of Civil Procedure and any applicable local rules of this  
25 Court including, but not limited to, service of a summons.

26 111. The section titles and captions contained in this  
27 Consent Decree are inserted only as a matter of convenience and  
28 for reference, and shall in no way be construed to define, limit,



1 or extend the scope of this Consent Decree or the intent of any  
2 of its provisions.

3 112. This Consent Decree may be signed in counterpart  
4 originals, all of which when taken together shall constitute an  
5 integrated agreement.

6

7 SO ORDERED THIS \_\_\_\_\_ DAY OF \_\_\_\_\_, 19 \_\_\_\_.

8

9

10

United States District Judge

11

12 THE UNDERSIGNED PARTIES enter into this Consent Decree in the  
13 matter of United States v. Chevron USA, Inc. et al., relating to  
14 the Purity Oil Superfund Site.

15

FOR THE UNITED STATES OF AMERICA

16

17

Date: April 19, 1998

18

Lois J. Schiffer

Assistant Attorney General  
Environment and Natural  
Resources Division

19

20

U.S. Department of Justice 950  
Pennsylvania Ave., N.W., #2143  
Washington, D.C. 20530  
(202) 514 2701

21

22

23

24

Date: April 20, 1998

25

David B. Glazer  
Environmental Enforcement Section  
Environment and Natural Resources  
Division

26

27

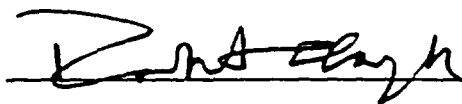
U.S. Department of Justice  
301 Howard Street, Suite 870  
San Francisco, California 94105  
(415) 744-6491

28

1 or extend the scope of this Consent Decree or the intent of any  
2 of its provisions.

3 112. This Consent Decree may be signed in counterpart  
4 originals, all of which when taken together shall constitute an  
5 integrated agreement.

6  
7 SO ORDERED THIS 21<sup>st</sup> DAY OF Dec., 1998.

8  
9 

10 United States District Judge

11  
12 THE UNDERSIGNED PARTIES enter into this Consent Decree in the  
13 matter of United States v. Chevron USA, Inc. et al., relating to  
14 the Purity Oil Superfund Site.

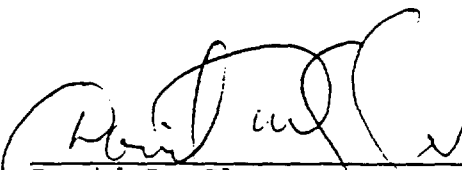
15 FOR THE UNITED STATES OF AMERICA

16  
17 Date: Apr 14 1998



18 Lois J. Schiffer  
19 Assistant Attorney General  
20 Environment and Natural  
21 Resources Division  
22 U.S. Department of Justice 950  
23 Pennsylvania Ave., N.W., #2143  
24 Washington, D.C. 20530  
25 (202) 514 2701

26  
27 Date: April 20 1998



28 David B. Glazer  
Environmental Enforcement Section  
Environment and Natural Resources  
Division  
U.S. Department of Justice  
301 Howard Street, Suite 870  
San Francisco, California 94105  
(415) 744-6491

1 Date: April 20, 1998

Steven Herm / DMS  
Steven Herm

2 Environmental Defense Section  
3 Environment and Natural Resources  
4 Division  
5 U.S. Department of Justice  
6 P.O. Box 23986  
7 Washington D.C. 20026-3986  
8 (202) 305-0331

9  
10 PAUL L. SEAVE  
11 United States Attorney  
12 Eastern District of California

13  
14 RICHARD CUTLER  
15 Assistant United States Attorney  
16 Eastern District of California  
17 3654 Federal Building  
18 1130 "O" Street  
19 Fresno, California 93721  
20 (209) 498-7272

21 Date: 3/17/98

Nancy Lindsay  
for Keith A. Takata  
22 Director, Superfund Division  
23 U.S. Environmental Protection  
24 Agency - Region 9  
25 75 Hawthorne Street  
26 San Francisco, California 94105  
27 (415) 744-2356

28 Date: 2/25/98

Matt Strassberg  
22 Matt Strassberg  
23 Assistant Regional Counsel  
24 U.S. Environmental Protection  
25 Agency - Region 9  
26 75 Hawthorne Street  
27 San Francisco, California 94105  
28 (415) 744-1370

1 United States v. Chevron USA, Inc. et al.  
2 Consent Decree Signature Page

3  
4 THE UNDERSIGNED PARTY enters into this Consent Decree in the  
5 matter of United States v. Chevron USA, Inc. et al., relating to  
6 the Purity Oil Superfund Site.

7 FOR \_\_\_\_\_ COMPANY, INC.

8  
9 Date: \_\_\_\_\_

\_\_\_\_\_  
[Name -- Please Type]

10 \_\_\_\_\_  
[Title -- Please Type]

11 \_\_\_\_\_  
[Address -- Please Type]

12  
13 Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

14 Name: \_\_\_\_\_  
15 [Please Type]

16 Title: \_\_\_\_\_

17 Address: \_\_\_\_\_

18 \_\_\_\_\_  
19 \_\_\_\_\_  
20 Tel. Number: \_\_\_\_\_

Date: \_\_\_\_\_

Felicia Marcus  
Regional Administrator  
U.S. Environmental Protection  
Agency - Region 9  
75 Hawthorne Street  
San Francisco, California 94105

Date: \_\_\_\_\_

Matt Strassberg  
Assistant Regional Counsel  
U.S. Environmental Protection  
Agency - Region 9  
75 Hawthorne Street  
San Francisco, California 94105  
(415) 744-1370

FOR THE CALIFORNIA DEPARTMENT OF  
TOXIC SUBSTANCES CONTROL

Date: 12-12-97

*William Brieger*  
William Brieger  
Deputy Attorney General  
1300 "I" Street  
Sacramento, California 95814  
(916) 324-2512

Date: 12/17/97

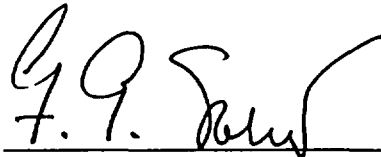
*James L. Tjosvold*  
Jim L. Tjosvold  
Chief, Central California Cleanup  
Operations Branch  
California Department of Toxic  
Substances Control  
400 "P" Street, 4th Floor  
Sacramento, California 95814

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR CHEVRON U.S.A. INC.

Date: February 12, 1998



[Name -- Please Type] F. G. SOLER

ASSISTANT SECRETARY

[Title -- Please Type]

575 MARKET ST., SAN FRANCISCO, CA 94105

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: H. P. WALKER  
[Please Type]

Title: ASSISTANT SECRETARY

Address: 575 MARKET STREET  
SAN FRANCISCO, CA 94105

Tel. Number: 415 - 894-2403

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR A. Levy & J. Zentner COMPANY, INC.  
Zentner Co.



Date: January 12, 1998

G. N. Thomas

[Name -- Please Type]

C. E. O.

[Title -- Please Type]

8160 Signal Ct. Sacramento, CA 95824

[Address --- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Michael V. Brady  
[Please Type]

Title: The Diepenbrock Law Firm

Address: 400 Capitol Mall, Suite 1800  
Sacramento, CA 95814

Tel. Number: (916) 446-4469

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR A. TEICHERT & SON, INC.

Date: 12/19/97 Bruce Stimson  
[Name -- Please Type]  
Vice President, Finance  
[Title -- Please Type]  
3500 American River Drive, Sacramento, CA  
[Address -- Please Type] 95864

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: FRANKLIN G. GUMPERT  
[Please Type]  
Title: Attorney  
Address: BARKETT, GUMPERT & REINER  
3620 American River Drive  
Suite 215  
Sacramento, CA 95864-5923  
Tel. Number: (916) 481-3683



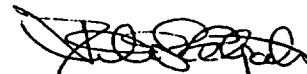
United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

A. VOLPATO, INC

FOR \_\_\_\_\_ COMPANY, INC.

Date: JANUARY 8, 1998



PIETRO J. VOLPATO

[Name -- Please Type]

PRESIDENT

[Title -- Please Type]

P.O. BOX 6058 CHICO, CA 95927-6058

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name:

PIETRO J. VOLPATO

[Please Type]

Title:

PRESIDENT

A. VOLPATO, INC

Address:

P.O. BOX 6058

CHICO, CA 95927-6058

Tel. Number:

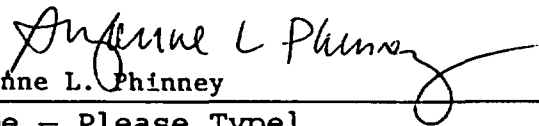
(530) 892-8150

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR AEROJET-GENERAL CORPORATION

Date: December 18, 1997

  
Suzanne L. Phinney  
[Name -- Please Type]  
Vice President, Environmental, Safety, and  
[Title -- Please Type] Health  
P. O. Box 13222, Sacramento, CA 95813-60  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: José N. Uranga  
[Please Type]  
Title: Senior Counsel, Environmental Law  
Address: Aerojet-General Corporation  
P. O. Box 13222  
Sacramento, CA 95813-6000  
Tel. Number: (916) 351-8597

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR AlliedSignal Inc.

Date: 12/19/97



[Name -- Please Type] Paul H. Arbesman  
Leader, Remediation and Evaluation Services

[Title -- Please Type]

101 Columbia Road, Morristown, NJ 07960  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name:

PAMELA J. CISSIK

[Please Type] Pamela J. Cissik

Title:

Senior Counsel - Environmental

Address:

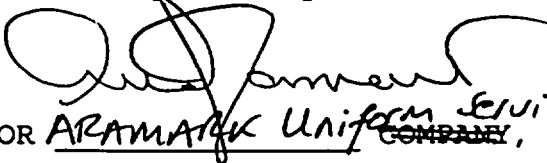
AlliedSignal  
P.O. Box 2245  
101 Columbia Road  
Morristown, NJ 07962-2245

Tel. Number:

(973) 455-5422

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

  
FOR ARAMARK Uniform Services, INC.

Date: January 26, 1998

ANDY CAMARATA

[Name -- Please Type]

VICE PRESIDENT

[Title -- Please Type]

115 N. First Street

[Address -- Please Type]

Burbank, CA

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: LAURENCE G. MILLER  
[Please Type]

Title: GENERAL COUNSEL

Address: ARAMARK Uniform Services  
115 North First Street  
Burbank, CA 91502

Tel. Number: 818 973 3525

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR The Burlington Northern and Santa Fe Railway Company, successor in interest to The Atchison, Topeka & Santa Fe Railway Company

Date: January 15, 1998

Mick E. Hardin  
[Name -- Please Type] Mick E. Hardin  
Manager, Environmental Remediation  
[Title -- Please Type]  
BNSF, Environmental & Hazardous  
[Address -- Please Type] Materials  
740 East Carnegie Drive  
San Bernardino, CA 92408-3571

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: C.T Corporation Systems  
[Please Type]

Title: \_\_\_\_\_

Address: 818 West Seventh Street  
Los Angeles, CA 90017


Tel. Number: 213.627.8252

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Atlantic Richfield Company,  
by and through ARCO Environmental Remediation, L.L.C.

Date: 2-20-98

  
\_\_\_\_\_  
[Name -- Please Type]  
Steven R. Porter  
\_\_\_\_\_  
[Title -- Please Type]  
Counsel and Vice President, Assessments  
\_\_\_\_\_  
[Address -- Please Type]  
444 S. Flower Street, ALF-3281  
Los Angeles, California 90071

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: CT Corporation  
\_\_\_\_\_  
[Please Type]

Title: Registered Agent  
\_\_\_\_\_

Address: 818 W. Seventh Street  
Los Angeles, California 90017  
\_\_\_\_\_  
\_\_\_\_\_

Tel. Number: (213) 627-8252  
\_\_\_\_\_

United States v. Chevron USA, Inc. et al.

Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR BALATTIS KALJIAN COMPANY, INC.

Date. 01-09-09

  
[Name -- Please Type]  
PRESIDENT

[Title -- Please Type]  
1209 6th STREET, LOS BANOS, CA 93635

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: DOUGLAS BALATTI  
[Please Type]

Title: OWNER

Address: 1209 6th STREET  
LOS BANOS  
CA 93635

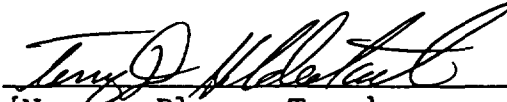
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United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR BALDWIN CONTRACTING COMPANY, INC.

Date: December 29, 1997

  
[Name -- Please Type] Terry D. Hildestad  
Chief Executive Officer  
[Title -- Please Type]  
1764 Skyway, Chico, CA 95928  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: CT Corporation System  
[Please Type]

Title: \_\_\_\_\_

Address: 818 West 7th Street  
Los Angeles, CA 90017  
\_\_\_\_\_  
\_\_\_\_\_

Tel. Number: 800-888-9207



United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

BEECHCRAFT WEST, INC. and  
FOR BEECH AIRCRAFT CORP. COMPANY, INC.

Date: January 15, 1998

  
[Name -- Please Type] PAUL R. FLAHERTY  
Their Attorney

[Title -- Please Type]  
333 South Hope Street, Suite 3650

[Address -- Please Type]  
Los Angeles, California 90071-1479

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: \_\_\_\_\_  
[Please Type]

Title: General Counsel

Address: RAYTHEON AIRCRAFT COMPANY  
Post Office Box 85  
Wichita, KS 67201-0085

Tel. Number: (316) 676-8721

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR ~~Bekins Moving & Stg.~~ COMPANY, INC.

Date: 1-8-98



Scott Ogden

[Name -- Please Type]  
Secretary

[Title -- Please Type]  
330 S. Mannheim Rd. Hillside, IL 60162  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Charles B. Rogers  
[Please Type]

Title: Attorney

Address: Briggs and Morgan  
2400 IDS Center  
80 So. 8th St.  
Minneapolis, MN 55402

Tel. Number: (612) 334-8446

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Borden COMPANY, INC.

Date: December 18, 1997

Colleen K. Nissl

[Name -- Please Type]

Vice President & Assistant General Counsel

[Title -- Please Type]

Borden, Inc., 180 E. Broad St., Columbus, OH

[Address -- Please Type] 43215

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: \_\_\_\_\_  
[Please Type]

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_


Tel. Number: \_\_\_\_\_

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR BRIDGESTONE/FIRESTONE, , INC.

Date: November 18, 1997

  
James K. Vines  
General Counsel - Environmental  
50 Century Blvd.  
Nashville TN 37214

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Heidi H. Bumpers  
[Please Type]  
Title: Counsel  
Address: Jones Day Reavis & Pogue  
Metropolitan Square  
1450 G Street, N.W.  
Washington D.C. 20005-2088  
Tel. Number: 202/879-7616

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

*Bruce Burns*

FOR Burns Chevrolet COMPANY, ~~INC.~~

Date: 12-18-97

Bruce Burns

[Name - Please Type]

Owner

[Title -- Please Type]

P.O. Box 515 Tranquillity, Ca 93668

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Bruce Burns

[Please Type]

Title: Owner

Address: P.O. Box 515 Tranquillity, Calif. 93668

Tel. Number: 209-698-7453


*Bruce Burns*

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR BURNS TRUCKING COMPANY, INC.  
    & RT BURNS, INC.

Date: January 16, 1998

 Thomas M. Burns  
[Name -- Please Type]  
Sec - Trans  
[Title -- Please Type]  
870 Forbes Avenue, Yuba City, CA  
[Address -- Please Type] 95991

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Daniel V. Martinez  
          [Please Type]  
  
Title: Attorney  
  
Address: P.O. Box 776  
          Yuba City, CA 95992-0776  
          \_\_\_\_\_  
          \_\_\_\_\_  
  
Tel. Number: (530) 674-9761

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR CALAVERAS CEMENT COMPANY

BY: 

Date: JANUARY 5, 1998

BRYAN BENNETT

[Name -- Please Type]

VICE PRESIDENT

[Title -- Please Type]

2300 CLAYTON ROAD, SUITE 300

[Address -- Please Type]  
CONCORD, CA 94520

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: M. ELIZABETH McDANIEL, ESQUIRE  
[Please Type]

Title: FOR: SHEPPARD, MULLIN, RICHTER & HAMPTON, LLP

Address: FOUR EMBARCADERO CENTER, 7TH FLR.  
SAN FRANCISCO, CA 94111-4106

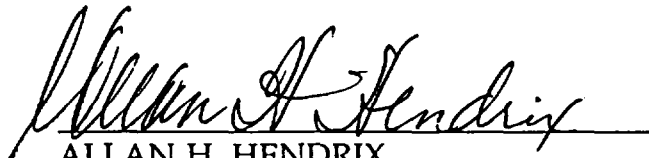
Tel. Number: (415) 434-9100

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of  
United States v. Chevron USA, Inc., et al., relating to the Purity Oil Superfund Site.

FOR DEPARTMENT OF TRANSPORTATION

Date: December 23, 1997



ALLAN H. HENDRIX  
Deputy Director, Planning  
1120 N Street, MS 49  
Sacramento, CA 95814

Agent Authorized to Accept Service on Behalf of the Above-signed Party:

THOMAS C. FELLEENZ  
Attorney  
Department of Transportation  
1120 N Street, MS 57  
Sacramento, CA 95814  
(916) 654-2630



United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

Champion  
FOR International Corp. COMPANY, INC.

Date: 1/9/98

Melinda S. Kemp MELINDA S. KEMP  
[Name -- Please Type]  
ENVIRONMENTAL PROJECTS MANAGER  
[Title -- Please Type]  
ONE CHAMPION PLAZA, STAMFORD, CT 06921  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: MELINDA S. KEMP  
[Please Type]

Title: ENV. PROJECTS MANAGER

Address: ONE CHAMPION PLAZA  
STAMFORD, CT 06921  
\_\_\_\_\_  
\_\_\_\_\_

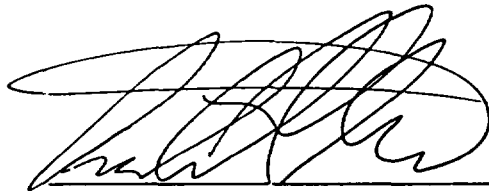
Tel. Number: 203/358-6476

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR CHICO UNIFIED SCHOOL DISTRICT  
COMPANY, INC.

Date: 2-1-98



[Name - RICHARD L. CRABTREE  
Attorney at Law

[Title -- Please Type]  
1367 E. Lassen, Chico, CA 95973  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: The Law Offices of  
CRAIG, SHEPHERD & CRABTREE  
[Please Type]

Title: Attorneys at Law

Address: 1367 E. Lassen Ave., Suite 1  
Chico, CA 95973

Tel. Number: 530-893-3700

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR CITY OF FRESNO

By: 

Date: January 7, 1998

JEFFREY M. REID

[Name - Please Type]  
City Manager

[Title -- Please Type]  
2600 Fresno Street, Fresno, CA 93721  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: MARTIN D. KOCZANOWICZ  
[Please Type]

Title: Deputy City Attorney

Address: 2600 Fresno Street  
Fresno, CA 93721

Tel. Number: (209) 498-1326

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR \_\_\_\_\_ COMPANY, INC.

Date: January 15, 1998

David R. Tooley David R. Tooley  
[Name -- Please Type]  
City Administrator

[Title -- Please Type]  
City of Madera, 205 W. 4th St.  
[Address -- Please Type] Madera CA 936

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Evonne Stephenson  
[Please Type]

Title: City Clerk - Cit of Madera

Address: 205 West Fourth Street  
Madera CA 93637

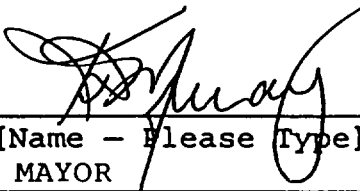
Tel. Number: (209) 661-5405

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR CITY OF REDDING

Date: December 22, 1997



[Name -- Please Type] KEN MURRAY  
MAYOR

[Title -- Please Type]

760 Parkview Avenue

[Address -- Please Type]

Redding, CA 96001

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Connie Strohmayr  
[Please Type]

Title: City Clerk

Address: 760 Parkview Avenue  
Redding, CA 96001

Tel. Number: (530) 225-4444

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR CITY OF SACRAMENTO

Date: 12-18-97  
\_\_\_\_\_  
Thomas B. Baber  
[Name -- Please Type]  
\_\_\_\_\_  
Liability Claims Manager  
[Title -- Please Type]  
921 10th Street, Sacramento, CA 95814  
[Address -- Please Type]

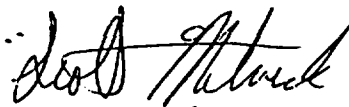
Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: FRANKLIN G. GUMPERT  
\_\_\_\_\_  
[Please Type]  
Title: Attorney  
\_\_\_\_\_  
Address: BARKETT, GUMPERT & REINER  
3620 American River Drive  
Suite 215  
Sacramento, CA 95864-5923  
Tel. Number: (916) 481-3683

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR CITY OF YUBA CITY COMPANY, INC.



Date: January 16, 1998

\_\_\_\_\_  
[Name -- Please Type]

\_\_\_\_\_  
[Title -- Please Type]

1201 Civic Center Blvd., Yuba City,  
[Address -- Please Type] CA 95991

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Daniel V. Martinez  
[Please Type]

Title: Attorney

Address: P.O. Box 776  
Yuba City, CA 95992-0776

Tel. Number: (530) 674-9761

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

COMMERCIAL BODY SALES & MANUFACTURING  
FOR 1-26-98 ~~COMPANY XXXXXX~~

*Kathleen Bedwell*

Date: January 26, 1998

*KATHLEEN*  
~~Katherine~~ C. Bedwell

[Name - Please Type]  
Secretary-Treasurer

[Title -- Please Type]  
2337 West Warner, Fresno, CA 93711

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

*KATHLEEN*  
Name: ~~Katherine~~ C. Bedwell  
[Please Type]

Title: Secretary

Address: 2337 West Warner, Fresno, CA 93711  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Tel. Number: (209) 431-2844



United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR CONNELL MOTOR TRUCK COMPANY, INC.

Date: DECEMBER 17 1997

SHELDON R HECKMAN

[Name -- Please Type]

PRESIDENT

[Title -- Please Type]

P O BOX 8467 STOCKTON CA 95208

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name:

SHELDON R HECKMAN

[Please Type]

Title:

PRESIDENT

Address:

P O BOX 8467

STOCKTON CA 95208

Tel. Number: (209) 466 2411

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

CONTINENTAL BAKING COMPANY, Now By Merger  
FOR INTERSTATE BRANDS CORPORATION

Date: 12/15/97



Ray Sandy Sutton

[Name -- Please Type]

Vice President

[Title -- Please Type]

12 E. Armour Boulevard, Kansas City, MO

[Address -- Please Type] 64111

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Ray Sandy Sutton  
[Please Type]

Title: Vice President

Address: Interstate Brands Corporation  
12 E. Armour Boulevard  
Kansas City, MO 64111


Tel. Number: (816) 502-4227

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR CONTINENTAL GENERAL TIRE, INC.  
~~COMPANY, INC.~~  
XXXXXXXXXXXX

Date: 2/18/98

  
MICHAEL McNALLY  
[Name - Please Type]  
DIRECTOR ENVIRONMENTAL HEALTH & SAFETY  
[Title -- Please Type]  
1800 CONTINENTAL BLVD.  
[Address -- Please Type]  
CHARLOTTE, NC 28273

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: RICK J. HOICOMB  
[Please Type]

Title: ASSISTANT COUNSEL

Address: 1800 CONTINENTAL BLVD.  
CHARLOTTE, NC 28273

Tel. Number: (704) 583-8723

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR COUNTY OF FRESNO

Date: February 3, 1998



[Name -- Please Type]

WILLIAM H. RANDOLPH

[Title -- Please Type]

County Administrative Officer

[Address -- Please Type]


2281 Tulare Street

Hall of Records

Fresno, CA 93721

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name:



[Please Type]

WILLIAM H. RANDOLPH

Title:

County Administrative Officer

Fresno County

Address:

Hall of Records

2281 Tulare Street

Fresno, CA 93721

Tel. Number: 209/488-1710

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

Date: JAN - 8 1998

COUNTY OF TEHAMA

A political subdivision of the State of California

By BILL BORROR  
BILL BORROR, Chairman of the Board of  
Supervisors of the County of Tehama,  
State of California

Attested: JAN - 8 1998  
MARY ALICE GEORGE, County Clerk  
and ex-officio Clerk of the Board of  
Supervisors of the County of Tehama

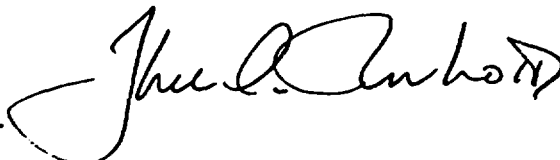
By Jessie Stewart

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: MARY ALICE GEORGE  
Title: County Clerk and ex-officio Clerk of the Board of  
Supervisors of the County of Tehama  
Address: 633 Washington Street, Room 12  
PO Box 250  
Red Bluff, CA 96080  
Tel. Number: (530) 527-3287

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

CUMMINS WEST, INC  
FOR \_\_\_\_\_ COMPANY, INC. 

Date: 2-10-98

JOHN A. RUBINO III  
[Name -- Please Type]  
CORPORATE COUNSEL  
[Title -- Please Type]

[Address -- Please Type]  
500 JACKSON STREET  
COLUMBUS, IN 47201

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: PAMELA CARTER  
[Please Type]

Title: VP-GENERAL COUNSEL

Address: 500 JACKSON STREET  
COLUMBUS, INDIANA 47203

Tel. Number: 612/377-3514

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

DEL MONTE CORPORATION  
FOR \_\_\_\_\_ ~~COMPANY, INC.~~

By: William R. Sawyers

Date: January 6, 1998

William R. Sawyers  
[Name -- Please Type]  
Vice President, General Counsel & Secretary  
[Title -- Please Type]  
Del Monte Corporation  
[Address -- Please Type]  
One Market  
San Francisco, CA 94105

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: William R. Sawyers  
[Please Type]  
Title: Vice President, General Counsel & Secretary  
Address: Del Monte Corporation  
One Market  
San Francisco, CA 94105  
Tel. Number: (415) 247-3262

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Diamond Truck COMPANY, INC.

Date: Dec 17-1997 NORMA MORRIS  
[Name -- Please Type]  
OWNER  
[Title -- Please Type]  
708 W Florodora Fresno  
[Address -- Please Type]

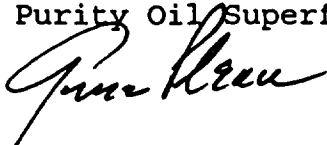
Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: NORMA MORRIS  
[Please Type]  
Title: OWNER  
Address: 708 W. Florodora  
FRESNO CA 93728  
\_\_\_\_\_  
\_\_\_\_\_  
Tel. Number: (209) 233-5880



United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.



FOR DOWNTOWN FORD SALES, INC. COMPANY, INC.

Date: 12/29/97 G.? EUGENE PLEAU  
[Name -- Please Type]  
PRESIDENT  
[Title -- Please Type]  
525 N 16th Street  
[Address -- Please Type]  
Sacramento, CA 95814

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: EUGENE PLEAU  
[Please Type]  
PRESIDENT  
Title: \_\_\_\_\_  
Address: 525 N 16th Street  
Sacramento, CA 95814  
\_\_\_\_\_  
\_\_\_\_\_  
Tel. Number: 916-442-6931

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR E.I. BRANDT TRUCKING  
COMPANY, INC.

Date: January 16, 1998

Norma Titus

Norma Titus  
[Name -- Please Type]  
Trustee

[Title -- Please Type]

3547 Oak Ridge Dr., Yuba City, CA

[Address -- Please Type] 95993

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Daniel V. Martinez  
[Please Type]

Title: Attorney

Address: P.O. Box 776  
Yuba City, CA 95992-0776

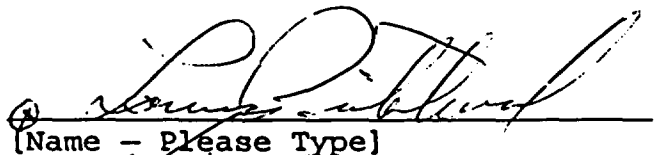
Tel. Number: (530) 674-9761

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Electric Garage COMPANY, INC.

Date: 1-9-98

  
[Name -- Please Type]

President (owner)  
[Title -- Please Type]

801 Main St Woodland, Ca 95695  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Lonnie Pritchard  
[Please Type]

Title: President

Address: 801 Main Street  
Woodland, CA 95695

Tel. Number: 916-662-4667

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

Endless Ventures, Inc.

FOR Frank J. Sanders COMPANY, INC.

Date: 12-31-97

Frank J. Sanders  
[Name -- Please Type]

Owner  
[Title -- Please Type]

594 S. Lewis Ave. Fresno, CA  
[Address -- Please Type] 93727

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Same  
[Please Type]

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_


Tel. Number: \_\_\_\_\_


United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

For: EXXON CORPORATION

Date: January 30, 1998

  
G. T. Theriot, Manager  
Environmental & Safety Department  
Exxon Company, U.S.A., an  
unincorporated division of  
Exxon Corporation  
800 Bell Street  
P. O. Box 2180  
Houston, TX 77252-2180

  
D. J. Potvin  
Counsel  
Exxon Company, U.S.A, an  
unincorporated division of  
Exxon Corporation  
800 Bell Street  
P. O. Box 2180  
Houston, TX 77252-2180

Agent Authorized to Accept Service on Behalf of Exxon Corporation:

J. F. Tully  
Assistant General Counsel  
Exxon Company, U.S.A.  
P. O. Box 2180  
800 Bell Street  
Houston, TX 77252-2180  
713/656-3573

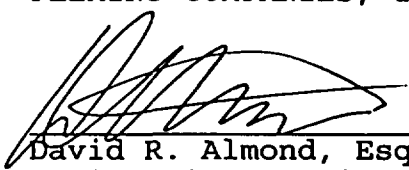
...  
United States v. Chevron USA, Inc., et al  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc., et al., relating to the Purity Oil Superfund Site.

For:

FLEMING COMPANIES, INC.

Date: January 14, 1998

  
\_\_\_\_\_  
David R. Almond, Esq.  
Senior Vice President,  
General Counsel and Secretary  
Fleming Companies, Inc.  
6301 Waterford Boulevard  
P. O. Box 26647  
Oklahoma City, OK 73126

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Steven R. Welch, Esq.  
McAfee & Taft  
A Professional Corporation  
10th Floor, Two Leadership Square  
211 North Robinson  
Oklahoma City, OK 73102  
(405) 235-9621

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR FMC Corporation COMPANY, INC.

Date: January 12, 1998



Robert T. Forbes

[Name -- Please Type]  
Director of Remediation

[Title -- Please Type]  
1735 Market Street, Phila., PA 19103

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: John F. Stillmun, Esquire  
[Please Type]

Title: Counsel

Address: 1735 Market Street  
Philadelphia, pa 19103

Tel. Number: \_\_\_\_\_

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

Farms  
FOR Foster Poultry COMPANY, INC.



Date: January 16, 1998

Randall C. Boyce

[Name -- Please Type]

Vice President & General Counsel

[Title -- Please Type]

1000 Davis Street, Livingston, CA

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Randall C. Boyce  
[Please Type]

Title: Vice President & General Counsel

Address: 1000 Davis Street  
Livingston, CA. 95334

Tel. Number: (209) 394-7901



United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Fredericksen Tank Lines ~~COMPANY~~, INC.

Date: January 20, 1998



L. D. Robinson

[Name - Please Type]

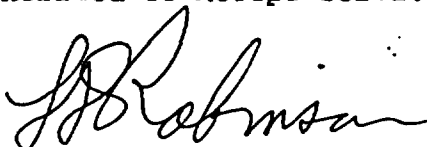
President

[Title -- Please Type]

P.O. Box 717, West Sacramento, CA 95691

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:



Name: L. D. Robinson

[Please Type]

Title: President

Address: P.O. Box 717  
West Sacramento,  
California  
95691

Tel. Number: (916) 371-4655

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Fresno Community Hospital aka Fresno Community Hospital and Medical Center  
COMPANY, INC.

Date: Dec 23, 1997 Robert N. Bury  
[Name -- Please Type]  
General Counsel & First Vice Secretary  
[Title -- Please Type]  
% Fresno Community Hospital  
[Address -- Please Type]  
P.O. Bx 1232  
Fresno, CA 93715-1232

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Robert N. Bury  
[Please Type]  
Title: General Counsel & First Vice Secretary  
Address: % Fresno Community Hospital  
P.O. Bx 1232  
Fresno, CA  
93715-1232  
Tel. Number: 209-442-6472

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page ...

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR FRESNO TRUCK CENTER COMPANY, INC., a California corporation

Date: January 5, 1998



Brian C. Nicholson

[Name -- Please Type]

Sec/CFO

[Title -- Please Type]

P O Box 12346; Fresno CA 93777

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Brian Nicholson  
[Please Type]

Title: Sec/CFO

Address: P O Box 12346  
Fresno CA 93777

Tel. Number: (209) 486-4310

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Fresno Westside Mosquito Abatement District  
FOR \_\_\_\_\_ COMPANY, INC.

Date: January 9, 1998

Elizabeth Ann Cline

Elizabeth Cline

[Name -- Please Type]

Manager

[Title -- Please Type]

P.O. Box 125, Firebaugh CA 93622

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Stephen Kent Ehat  
[Please Type]

Title: Attorney

Address: 7112 N. Fresno St., Ste 140  
Fresno, CA 93720

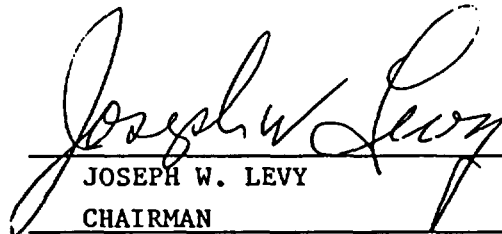
Tel. Number: (209) 431-6800

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR GOTTSCHALKS COMPANY, INC.

Date: February 5, 1998

  
JOSEPH W. LEVY  
CHAIRMAN

[Title -- Please Type]

7 RIVER PARK PLACE EAST, FRESNO, CA. 9372  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name:

  
WARREN L. WILLIAMS

Title:

GENERAL COUNSEL

Address:

7 RIVER PARK PLACE EAST  
FRESNO, CA. 93720

Tel. Number: (209) 434-4779

United States v. Chevron USA, Inc. et al.

Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR GRANITE CONSTRUCTION COMPANY, INC.

Date: 1-22-98

BY: 

William E. Barton

[Name -- Please Type]

Vice President

[Title -- Please Type]

P.O. Box 50085, Watsonville, CA 95077

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Michael Futch

[Please Type]

Title: Vice President

Address: Granite Construction Company

P.O. Box 50085

Watsonville, CA 95077-5085

Tel. Number: (408) 761-4708

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR GRIDLEY COUNTRY FORD MERCURY  
~~COMPANY XXXXXX~~

Date: 12-15-97



Thomas Winterstein

[Name -- Please Type]

President

[Title -- Please Type]

1709 U.S. Highway 99, Gridley, CA

[Address -- Please Type] 95948

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Curtis L. Coleman

[Please Type]

Title: Attorney at Law

Address: 6601 Center Drive West, Suite 500  
Los Angeles, CA 90045

Tel. Number: (310) 348-8186

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR GUILD COOPERATIVE

Date:

January 10, 1998

Harry E. Trembath  
[Name - Please Type]

Harry E. Trembath

[Title -- Please Type]

President & CEO

[Address -- Please Type]

390 Diablo Road, Suite 230  
Danville, California 94526

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Kermit A. Brashear

[Please Type]

Title: Legal Counsel

Address: BRASHEAR & GINN

800 Farnam Plaza

1623 Farnam Street

Omaha, Nebraska 68102-2106

Tel. Number: (402) 348-1000



United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR H & J CHEVROLET COMPANY, INC.



Date: 12/29/97

JOHN TEIXEIRA

[Name - Please Type]

PRES.

[Title -- Please Type]

P.O. BOX 307 KERMAN, CA 93630

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: JOHN TEIXEIRA

[Please Type]

Title: PRES.

Address: P.O. BOX 307

KERMAN, CA 93630

Tel. Number: (209) 846-9335

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

H.R. BEELER TRACTOR & EQUIPMENT  
FOR Richard DiHel COMPANY, INC.

Date: January 16, 1998

RICHARD DIHEL

[Name -- Please Type]

President - Manager

[Title -- Please Type]

887 Onstott Road, Yuba City, CA 95991

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Daniel V. Martinez  
[Please Type]

Title: Attorney

Address: P.O. Box 776  
Yuba City, CA 95992-0776

Tel. Number: (530) 674-9761

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Hallowell Chev COMPANY, INC.

Date: 12-16-97

James D Hallowell

[Name -- Please Type]  
President

[Title -- Please Type]  
961 W Shaw, Clovis, CA 93612

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: James D Hallowell  
[Please Type]

Title: President

Address: 961 W Shaw  
Clovis, CA 93612

Tel. Number: (209) 291-7711

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

HAMON ENTERPRISES (fka MID-VALLEY TOYOTA)  
FOR \_\_\_\_\_ COMPANY, INC.

Date: January 16, 1998

Hamon Enterprises  
(fka Midvalley Toyota) W-E Hamon  
[Name -- Please Type]  
\_\_\_\_\_  
President  
[Title -- Please Type]  
P.O. Box AE, Yuba City, CA 95992  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:


Name: Daniel V. Martinez  
[Please Type]  
Title: Attorney  
Address: P.O. Box 776  
Yuba City, CA 95992-0776  
\_\_\_\_\_  
\_\_\_\_\_  
Tel. Number: (530) 674-9761

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR HARON MOTOR SALES, ~~COMPANY~~, INC.

Date: December 18, 1997

LOLITA V. PAYAN 

[Name -- Please Type]

CORPORATE SECRETARY

[Title -- Please Type]

2222 VENTURA AVE. FRESNO, CA 93721

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: LOLITA V. PAYAN

[Please Type]

Title: CORPORATE SECRETARY

Address: 2222 VENTURA AVE.

FRESNO, CA 93721

Tel. Number: (209) 237-5533

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Hoblitt Motors COMPANY, INC.

Date: 2-9-98

David W. Hoblitt David W. Hoblitt  
[Name -- Please Type]

Pres  
[Title -- Please Type]

PO Box 489 Colusa, Ca 95932  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name:

David W Hoblitt  
[Please Type]

Title:

President

Address:

PO Box 489  
5th Main St  
Colusa, Ca 95932

Tel. Number: 530-458-2151

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR J. C. Penney COMPANY, INC.



Date: December 17, 1997

William H. Baxley, III

[Name -- Please Type]

Manager, Risk Management and Insurance

[Title -- Please Type]

6501 Legacy Drive, MS 1304, Plano, TX 75075

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Frances Valdez Valdez  
[Please Type]

Title: Environmental Attorney

Address: 6501 Legacy Drive, MS 1106  
Plano, TX 75024-3698

Tel. Number: (972) 431-1243

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR J.R. SIMPLOT COMPANY, INC.

Date: January, 1998

  
[Name -- Please Type] Larry Hinderager  
President, M & C Group

[Title -- Please Type]

P.O. Box 912, Pocatello, ID 83204

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: CT Corp. Systems  
[Please Type]

Title: \_\_\_\_\_

Address: 818 West Seventh Street  
Los Angeles, CA 90017

Tel. Number: \_\_\_\_\_



United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Jensen & Pilegard, a California corporation  
The covenants not to sue and contribution protection shall also run in favor of Zurich American Insurance Company and Truck Insurance Company with respect to policies they issued to Jensen & Pilegard as stated in Jensen & Pilegard's commitment.

Date: February 5, 1998.

  
[Name -- Please Type] Cris Pilegard  
Secretary/Treasurer

[Title -- Please Type]  
1068 G. Street

[Address -- Please Type]  
Fresno, CA 93706

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name:

  
[Please Type]

Cris Pilegard

Title:

Secretary/Treasurer

Address:

1068 G. Street

Fresno, CA 93706

Tel. Number: 209/268-9221

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR John Roth Chevrolet COMPANY, INC.

Date: Jan. 12, 1998

James N. Roth

[Name -- Please Type]

General Manager

[Title -- Please Type]

P.O. Box 551, Merced, CA 95341

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: James N. Roth  
[Please Type]

Title: General Manager

Address: P.O. Box 551  
Merced, CA 95341

Tel. Number: (209) 723-0451

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

JOHN WHEELER LOGGING, INC.  
FOR \_\_\_\_\_ COMPANY, INC.

Date: January 13, 1998

DAVID HOLDER

[Name -- Please Type]

PRESIDENT

[Title -- Please Type]

P. O. BOX 339

[Address -- Please Type]  
RED BLUFF, CA 96080

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: DAVID HOLDER

[Please Type]

Title: PRESIDENT


Address: P. O. BOX 339

RED BLUFF, CA 96080

Tel. Number: (530) 527-2993

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

  
FOR KERMAN UNIFIED ~~XXXXXXXXXXXX~~  
SCHOOL DISTRICT

Date: January 12, 1998

Lloyd Wamhof

[Name -- Please Type]  
Superintendent

[Title -- Please Type]

151 S. First Street, Kerman, CA 93630  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Larry Teixeira  
[Please Type]

Title: Director, Financial Services

Address: 151 S. First Street  
Kerman, CA 93630

Tel. Number: (209)846-5383

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

CORPORATION  
FOR KIMBERLY-CLARK COMPANY, INC.  
XXXXXXXXXXXXXX

SIGNATURE: Kenneth A. Strassner  
Kenneth A. Strassner

Date: January, 1998

Kenneth A. Strassner  
[Name -- Please Type]  
Vice President - Environment and Energy  
[Title -- Please Type]  
1400 Holcomb Bridge Rd., Roswell GA 30076  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Marcia K. Cowan, Esq.  
[Please Type]

Title: Counsel

Address: 1400 Holcomb Bridge Road  
Roswell, Georgia 30076

Tel. Number: (770) 537-7234

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Kings County Truck <sup>LNS</sup> COMPANY, INC.

Date: Jan 12, 1998



[Name - Please Type]

H.W. BEELER JR.

[Title -- Please Type]

EXEC. VICE PRES

[Address -- Please Type]

KINGS COUNTY TRUCK LINES  
754 S BLACKSTONE  
TULARE, CALIFORNIA 93275  
P.O. BOX 1016

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Michael Scott Feeley  
[Please Type]

Title: Attorney

Address: Latham & Watkins  
633 West Fifth Street  
Suite 4000  
Los Angeles, CA 90071-2007

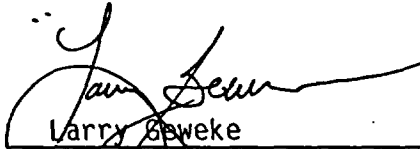
Tel. Number: (213) 485-1234

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

LARRY GEWEKE FORD, INC.  
FOR \_\_\_\_\_ COMPANY, INC.

Date: January 16, 1998

  
Larry Geweke  
[Name -- Please Type]  
President

[Title -- Please Type]

871 Onstott Road, Yuba City, CA 95991  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Daniel V. Martinez  
[Please Type]

Title: Attorney

Address: P.O. Box 776  
Yuba City, CA 95992-0776

Tel. Number: (530) 674-9761

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Lassen Tractor COMPANY, INC.

Date: 1-9-98

Eugene C Carter

[Name -- Please Type]

President

[Title -- Please Type]

13514 Hwy 99 Chico, CA 95973

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: John P. Coleman, Esq.  
[Please Type]

Title: Attorney at Law

Address: Bolling, Walter & Gawthrop  
8880 Cal Center Drive, #400  
Sacramento, California 95826

Tel. Number: (916) 369-0777

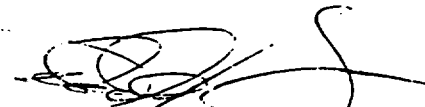


United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Lee's Concrete Materials, Inc.  
COMPANY, INC.

Date: February 4, 1998

  
[Name - Please Type]

Deidre da Silva

[Title -- Please Type]

Treasurer

[Address -- Please Type]

P.O. Box 509

Madera, CA 93639-0509

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Deidre da Silva

[Please Type]

Title: Treasurer

Address: Lee's Concrete Materials Inc.

P.O. Box 509

Madera, CA 93639-0509

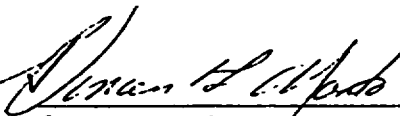
Tel. Number: (209) 673-9189

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Maita Oldsmobile, a California corporation

Date: January 14, 1998

 /Vincent L. Maita  
[Name - Please Type]

President

[Title -- Please Type]

2211 Fulton Avenue, Sacramento, CA

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: John C. Lassner  
[Please Type]

Title: Attorney at Law

Address: 2180 Harvard Street, Suite 200  
Sacramento, CA 95815

Tel. Number: (916) 924-9200

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR McCLATCHY NEWSPAPERS  
COMPANY, INC.

Date: January 8, 1998

Karole Morgan-Prager  
[Name - Please Type]  
Karole Morgan-Prager  
[Title -- Please Type]  
Secretary  
[Address -- Please Type]  
2100 Q Street  
Sacramento, CA 95816

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Karole Morgan-Prager  
[Please Type]  
Title: Secretary  
Address: McCLATCHY NEWSPAPERS, INC.  
2100 Q Street  
Sacramento, CA 95816  
Tel. Number: (916) 321-1828

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR McCloud River Railroad <sup>Co.</sup> ~~COMPANY, INC.~~

Date: January 8, 1998

James E. Knox

[Name -- Please Type]

Secretary

[Title -- Please Type]

2 North Riverside Plaza; Chicago, IL 60606

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above signed Party:

Name: James E. Knox

[Please Type]

Title: Secretary

Address: 2 North Riverside Plaza  
Chicago, Illinois 60606

Tel. Number: (312) 466-3208

United States v. Chevron USA, Inc. et al.

Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR McColl's Corporation, Inc.

Date:

12-16-97



[Name - Please Type]

Dan Kosewski

[Title -- Please Type]

Vice President Administration

[Address -- Please Type]

1013 D Street

Sacramento, CA 95814

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name:

Stephen H. Johanson

[Please Type]

Managing Partner

Title:

JOHANSON & ROBINSON

Address:

2485 Natomas Park Drive, #340

Sacramento, CA 95833

Tel. Number: (916) 567-1000

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR H. McKenzie Trusting COMPANY, INC.



Date: 1-14-98

Connie McKenzie

[Name - Please Type]  
Secretary/Treasurer

[Title -- Please Type]  
6872 E. Floral Avenue

[Address -- Please Type]  
Selma, California 93662

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: David Douglas Doyle, Esq.

[Please Type]

Title: DOYLE, PENNER & BRADLEY  
Attorney

Address: 5250 N. Palm Avenue, Suite 401  
Fresno, California 93704

Tel. Number: (209) 261-9321

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR McKesson Corporation COMPANY, INC.

Date: January 13, 1998



[Name -- Please Type] -

Alan Pearce

[Title -- Please Type]

Treasurer

[Address -- Please Type]

McKesson Corporation

One Post Street

San Francisco, CA 94104

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Ivan Meyerson

[Please Type]

Title: Vice President and General Counsel

Address: McKesson Corporation

One Post Street

San Francisco, CA 94104

Tel. Number: 415-983-7507

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

MELE INVESTMENT GROUP, INC.  
FOR \_\_\_\_\_ COMPANY, INC.

Date: January 16, 1998



Art Mele

[Name -- Please Type]

Vice President

[Title -- Please Type]

P.O. Box 512, Yuba City, CA 95992

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Daniel V. Martinez  
[Please Type]

Title: Attorney

Address: P.O. Box 776  
Yuba City, CA 95992-0776

Tel. Number: (530) 674-9761



United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

MERCED IRRIGATION DISTRICT, a California Irrigation District  
FOR \_\_\_\_\_ ~~COMPANY INC~~

Date: January 14, 1998



Ross Rogers

[Name -- Please Type]

General Manager

[Title -- Please Type]

720 West 20th Street, Merced, CA 95340

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Corbett J. Browning  
[Please Type]

Title: Assistant General Counsel

Address: 3351 N. "M" St., Ste 100, Merced, CA 95348  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

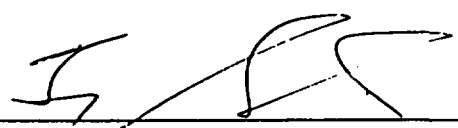
Tel. Number: (209) 383-9334

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Merced Union High School District

Date: January 2, 1998

  
\_\_\_\_\_  
Terry Silva

[Name -- Please Type]

Executive Director, Business Services  
[Title -- Please Type]

P. O. Box 2147 Merced, CA 95344  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Chet Quaide  
[Please Type]

Title: Attorney at Law

Address: Atkinson, Andelson, Loya, Ruud & Romo  
The Atrium, Suite 200  
5776 Stoneridge Mall Road  
Pleasanton, CA 94588

Tel. Number: 510-227-9200

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR-----COMPANY,--ING.

FOR MICHIGAN-CALIFORNIA LUMBER COMPANY

Date: 12/23/97

J.H. Gonyea II 

[Name - Please Type]

General Partner

[Title -- Please Type]

305 S. 4th Street, Springfield, OR

[Address -- Please Type] 97477

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: \_\_\_\_\_

[Please Type]

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

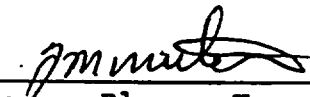
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United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Mobil Oil Corporation

Date: 01/29/98

  
[Name -- Please Type] T. M. Milton  
Manager, Superfund Response Group  
[Title -- Please Type]  
3225 Gallows Road, VA 22037  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: The Prentice-Hall Corp. System, Inc.  
[Please Type]

Title: \_\_\_\_\_

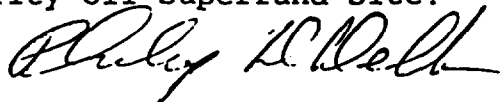
Address: Suite 250  
1455 Response Road  
Sacramento, CA 95815

Tel. Number: (916) 649-9916

United States v. Chevron USA, Inc. et al.

Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.



FOR Montgomery Ward & Co., Incorporated

Date: February 12, 1998

Philip D. Delk, Esq.

[Name -- Please Type]

Vice President & Deputy General Counsel

[Title -- Please Type]

One Montgomery Ward Plaza (24-N)

[Address -- Please Type]  
Chicago, IL 60671

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Mark B. Gilmartin, Esq.

[Please Type]

Title: Attorney

Gilmartin & Le Berthon LLP  
Address: 100 Wilshire Blvd, Suite 1325  
Santa Monica, CA 90401-1114

Tel. Number: (310) 395-7333

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Morrison Knudsen Corporation, and as a member of the Morrison Knudsen, BHP-International, Brown & Root Joint Venture  
Edwin V. Apel, Jr.

Date: Jan. 20, 1998

Edwin V. Apel, Jr.

[Name -- Please Type]

Vice President-Risk Management

[Title -- Please Type]

P.O. Box 73, Boise, ID 83729

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Edwin V. Apel, Jr.

[Please Type]

Title: Vice President-Risk Management

Address: P.O. Box 73

Boise, ID 83729


Tel. Number: 208-386-5010

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR BHP-UTAH INTERNATIONAL INC and as a member of the Morrison Knudsen,  
BHP-Utah International, Brown & Root  
Joint Venture

Date: January 23, 1998

  
[Name - Please Type] T.R. Winterer  
Senior Vice President  
[Title -- Please Type]  
550 California Street, San Francisco, CA  
[Address -- Please Type] 94104

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: \_\_\_\_\_  
[Please Type]

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Tel. Number: \_\_\_\_\_

United States v. Chevron USA, Inc. et al.

Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Brown & Root, Inc., and as a member of the Morrison Knudsen, BHP-Utah International, Brown & Root Joint Venture

Date: JAN. 27, 1998

Peter W. Arbour

[Name -- Please Type]

Peter Arbour, V.P. General Counsel

[Title -- Please Type]

4100 Clinton Dr., Houston, TX 7702

[Address -- Please Type]

APPROVED  
LEGAL DEPARTMENT  
BY: [Signature]  
DATE: 4/25/98

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: CT Corporation System

[Please Type]

Title: \_\_\_\_\_

Address: 811 Dallas Ave., Suite 1500  
Houston, Texas 77002

Tel. Number: (713) 658-9486



United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

NAVISTAR INTERNATIONAL TRANSPORTATION CORP.  
FOR \_\_\_\_\_ COMPANY, INC.

Date: 12/18/97

*Edith Ardiente 1/9/98*

Edith Ardiente

[Name -- Please Type]

Director, Environmental Affairs

[Title -- Please Type]

455 N. Cityfront Plaza, Ste. 1300

[Address -- Please Type]

Chicago, IL 60611

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Michael A. Jarrick

[Please Type]

Title: Senior Counsel

Address: 455 N. Cityfront Plaza, Ste. 1300

Chicago, IL 60611

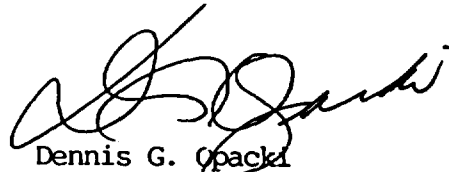
Tel. Number: (312) 836-2506

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

PACCAR Automotive, Inc.  
FOR \_\_\_\_\_ COMPANY, INC.

Date: 12/29/97



Dennis G. Opacki

[Name - Please Type]

Senior Counsel, PACCAR Inc

[Title -- Please Type]

PO Box 1518, Bellevue, WA 98009

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Sedwick, Detert, Moran & Arnold  
[Please Type]

Title: Attorneys at Law

Address: One Embarcadero Center, 16th Floor  
San Francisco, CA 94111-3765

Tel. Number: 415-781-7900

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Pacific Bell ~~COMPANY, INC.~~

Date: 1.16.98

  
IRENE SOTO

[Name -- Please Type]  
MANAGER

[Title -- Please Type]  
2600 CAMINO RAMON, IN200

[Address -- Please Type]  
SAN RAMON, CA. 94583

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Pacific Bell  
[Please Type]

Title: \_\_\_\_\_

Address: 1250 Webster St.  
Room 735A  
Oakland, CA 94612

Tel. Number: 800-421-2568


For Notice of Acknowledgment, pls send  
by U.S. Mail to ELTA M. Wilson, Senior Counsel,  
1010 Wilshire Blvd. Room 1501, Los Angeles, CA 90017.  
213-975-7318.

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

Pacific Gas & Electric  
FOR \_\_\_\_\_ COMPANY, INC.

Date: February 12, 1998

  
\_\_\_\_\_  
[Name -- Please Type]

Vice President - General Services

\_\_\_\_\_  
[Title -- Please Type]

P.O. Box 770000, S.F., CA 94177

\_\_\_\_\_  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: William E. Cosden  
\_\_\_\_\_  
[Please Type]

Title: Attorney

Address: 77 Beale Street  
Post Office Box 7442  
San Francisco, CA 94120

Tel. Number: 415 973-8830


United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR \_\_\_\_\_ COMPANY, INC.

PEART'S AUTO SUPPLY

Date: 1/14/98



\_\_\_\_\_  
[Name -- Please Type]  
President

\_\_\_\_\_  
[Title -- Please Type]  
212 East 6th St., Madera, CA 93638  
\_\_\_\_\_  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Brent Peart

\_\_\_\_\_  
[Please Type]

Title: President

Address: 212 East 6th St.  
Madera, CA 93638  
\_\_\_\_\_  
\_\_\_\_\_

Tel. Number: (209) 674-6754

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR PHILLIPS PETROLEUM COMPANY, ~~INC.~~

*T. G. Erickson*

Date: 1/16/98

T. G. Erickson

[Name -- Please Type]

Manager Property Risk Management

[Title -- Please Type]

13 D4 Phillips Building

[Address -- Please Type]

Bartlesville, OK 74004

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Clyde W. Lea  
[Please Type]

Title: Associate General Counsel

Address: Phillips Petroleum Company  
1266-A Adams Building  
Bartlesville, OK 74004

Tel. Number: (918) 661-3762

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR pistoresi CPDJE COMPANY, INC.

Date: 12/16/97



Chris Pistoresi

[Name -- Please Type]

General Manager

[Title -- Please Type]

P. O. Box 869 Madera, Ca. 93639

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Chris Pistoresi  
[Please Type]

Title: General Manager

Address: P. O. Box 869  
Madera, Ca. 93639

Tel. Number: 209-674-5661

United States v. Chevron USA, Inc. et al.

matter of United States v. Chevron USA, Inc. et al., relating to

PRODUCERS COTTON OIL  
FOR                      COMPANY, INC.

Date: February 25, 1998

Steven D. Huff

[Name - Please Type]

**Secretary**

[Title -- Please Type]

3325 West Figarden Drive, Fresno, C

[Address -- Please Type] 93711

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Steven D. Huff, Esq.

[Please Type]

Title: General Counsel

Address: PRODUCERS COTTON OIL COMPANY  
3325 West Figarden Drive  
Fresno, California 93711

Tel. Number: (209) 446-6424

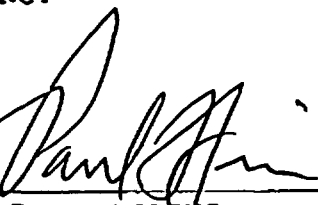


United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR QUINN COMPANY, INC.

Date: 4-2-98



PAUL LUCINI

Vice President

[Title -- Please Type]

P. O. Box 12625, Fresno, CA 93778

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: PAUL LUCINI  
[Please Type]

Title: Vice President

Address: P. O. Box 12625  
Fresno, CA 93778

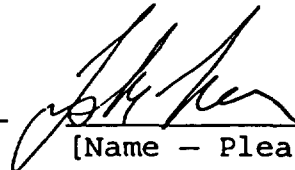
Tel. Number: (209) 896-4040

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR The Earthgrains COMPANY, INC.  
f.k.a. Rainbo Baking Company

Date: 1/12/98



[Name -- Please Type]

Joseph M. Noelker

[Title -- Please Type]

VP & General Counsel

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Michael Scott Feeley  
[Please Type]

Title: Attorney

Address: Latham & Watkins  
633 West Fifth Street  
Suite 4000  
Los Angeles, CA 90071-2007

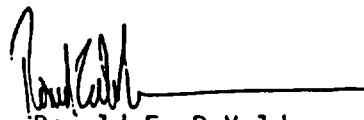
Tel. Number: (213) 485-1234

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Redding Kenworth COMPANY, INC.

Date: January 15, 1998

  
Ronald E. DeVolder

[Name -- Please Type]  
Vice President

[Title -- Please Type]  
550 N.E. Columbia Blvd, Portland, OR 97211

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Ronald E. DeVolder  
[Please Type]

Title: Vice President

Address: Redding Kenworth Company  
550 N.E. Columbia Blvd.  
Portland, OR 97211

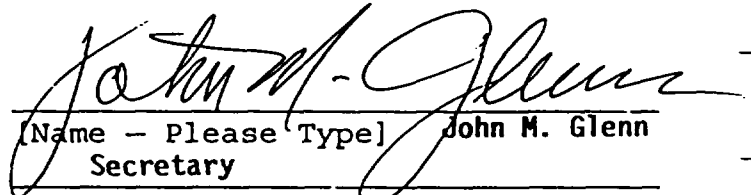
Tel. Number: 503-240-6282

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Roadway Express, Inc. COMPANY, INC.

Date: January 9, 1998

  
[Name -- Please Type] John M. Glenn  
Secretary  
[Title -- Please Type]  
1077 Gorge Blvd., Akron, OH 44310  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

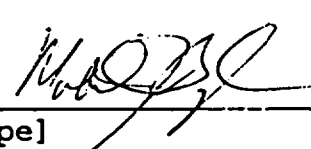
Name: John M. Glenn  
[Please Type]  
Title: Secretary  
Address: 1077 Gorge Blvd.  
Akron, OH 44310  
  
  
Tel. Number: (330) 384-2661

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR SAFEWAY INC. ~~COMPANY XXXXXX~~

Date: January 7, 1998

Michael J. Boylan   
[Name -- Please Type]  
Vice President & Asst. Gen. Counsel  
[Title -- Please Type]  
5918 Stoneridge Mall Road  
Pleasanton, CA 94588  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Michael Scott Feeley  
[Please Type]

Title: Attorney

Address: Latham & Watkins  
633 West Fifth Street, Suite 4000  
Los Angeles, CA 90071-2007


Tel. Number: (213) 485-1234

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR San Juan Unified School District COMPANY, INC.

Date: 1/14/98

Ray Tolleson 

[Name -- Please Type]

Superintendent of Schools

[Title -- Please Type]

P.O. Box 477, Carmichael, CA 95609-0477

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Diane Marshall-Freeman  
[Please Type]

Title: Assistant General Counsel

Address: San Juan Unified School District  
P.O. Box 477  
Carmichael, CA 95609-0477

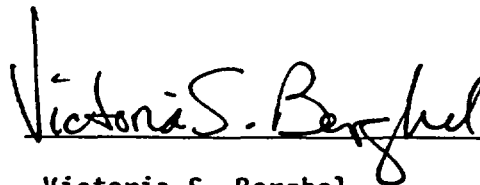
Tel. Number: (916) 971-7126

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Sears, Roebuck and Co.

Date: 01/13/98



Victoria S. Berghe

[Name -- Please Type]

Assistant General Counsel - Real Estate

[Title -- Please Type]

3333 Beverly Road, Hoffman Estates, IL 60179

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Michael Scott Feeley  
[Please Type]

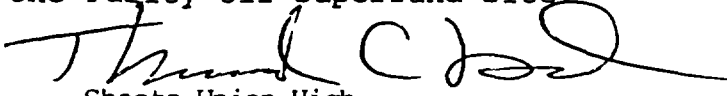
Title: Attorney

Address: Latham & Watkins  
633 West Fifth Street  
Suite 4000  
Los Angeles, CA 90071-2007

Tel. Number: \_\_\_\_\_

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site

  
Shasta Union High  
FOR School District COMPANY, INC.

Date: January 30, 1998

Theodore C. Hood

[Name - Please Type]

Director of Finance

[Title -- Please Type]

1313 Yuba Street, Redding, CA 96001

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: \_\_\_\_\_

[Please Type]

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Tel. Number: \_\_\_\_\_

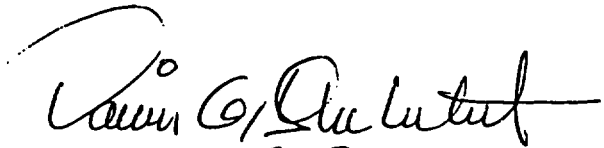


United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR DARWIN G. SHEBELUT ~~COMPANY, INC.~~

Date: 4-4-98

  
DARWIN G. SHEBELUT  
[Name - Please Type]

[Title -- Please Type]

206 Redwood Drive, MADERA, CA  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: \_\_\_\_\_  
[Please Type]

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Tel. Number: \_\_\_\_\_

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR SHELDON OIL COMPANY, INC.

Date: 1/14/98

Jill Hopkins Jill Hopkins  
[Name -- Please Type]  
Secretary Treasurer

[Title -- Please Type]  
2850 Cordelia Road, #120, Suisun, CA  
[Address -- Please Type] 94585

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: \_\_\_\_\_  
[Please Type]

Title: President  
Sheldon Oil Company  
Address: 2850 Cordelia Road, #120  
Suisun, CA 94585

Tel. Number: (707) 425-2951

United States v. Chevron, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc., et al., relating to the Purity Oil Superfund Site.

FOR: SHELL OIL COMPANY

Date:

JANUARY 26, 1998



G. A. Thompson  
Manager, Remediation  
P. O. Box 2463  
Houston, Texas 77252-2463

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Thomas W. Kearns

Title: Senior Counsel

Address: One Shell Plaza  
900 Louisiana  
Houston, Texas 77002

P. O. Box 2463  
Houston, Texas 77252-2463

Tel. Number: (713)241-5633

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

SOUTHERN PACIFIC TRANSPORTATION COMPANY  
FOR \_\_\_\_\_

Date: JAN 1 1998

James V. Dean  
[Name -- Please Type]

\_\_\_\_\_  
[Title -- Please Type]  
Vice President - Law

\_\_\_\_\_  
[Address -- Please Type]

LAW DEPT  
1416 DODGE STREET  
OMAHA, NEBRASKA 68179

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: THOMAS GREENLAND  
[Please Type]

Title: ENVIRONMENTAL COUNSEL

Address: UNION PACIFIC RAILROAD CO.  
1416 DODGE STREET  
OMAHA, NE 68179


Tel. Number: (402) 271-4634

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

SUN-MAID GROWERS OF  
FOR CALIFORNIA ~~XXXXXXXXXXXX~~ COMPANY, INC.

Date: JANUARY 15, 1998

  
[Name -- Please Type] BARRY F. KRIEBEL  
PRESIDENT  
[Title -- Please Type]  
13525 S. BETHEL AVENUE, KINGSBURG, CA  
[Address -- Please Type] 93631

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: \_\_\_\_\_  
[Please Type]

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

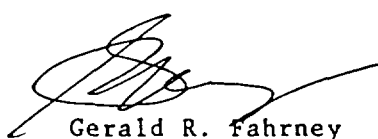
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United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Swanson-Fahrney Ford <sup>Sales</sup> ~~COMPANY~~, INC.

Date: January 9, 1998

  
Gerald R. Fahrney

[Name -- Please Type]

President

[Title -- Please Type]

P.O. Box 160 Selma, CA 93662

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Gerald R. Fahrney  
[Please Type]

Title: President

Address: 3105 Highland  
P.O. Box 160  
Selma, CA 93662

Tel. Number: (209) 896-4121

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR TED SMITH EQUIPMENT COMPANY, INC.



Date: January 12, 1998

Steven Lum

[Name -- Please Type]

Secretary/Treasurer

[Title -- Please Type]

3183 S. Parkway Drive Fresno, CA 93725

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: TED SMITH  
[Please Type]

Title: PRESIDENT

Address: 3183 S. PARKWAY DRIVE  
FRESNO CA 93725

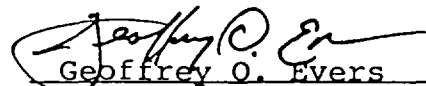
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United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR TENCO ~~COMPANY~~ INC.

Date: January 14, 1998

  
Geoffrey O. Evers

[Name -- Please Type]  
Attorney for

[Title -- Please Type]  
Law Offices of Geoffrey O. Evers  
400 Capitol Mall, Suite 1400, Sacramento, CA  
[Address -- Please Type] 95814

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Geoffrey O. Evers  
[Please Type]

Title: Attorney for  
Law Offices of Geoffrey O. Evers  
Address: 400 Capitol Mall, Suite 1400  
Sacramento, CA 95814

Tel. Number: (916) 492-0714



United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR TEXACO INC. COMPANY, INC.



Date: December 23, 1997

Gordon A. Turl

[Name - Please Type]

Senior Environmental Specialist

[Title -- Please Type]

10 Universal City Plaza, Suite 700

[Address -- Please Type]

Universal City, CA 91608

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Lowell N. Elsen  
[Please Type]

Title: Regional Counsel

Address: 10 Universal City Plaza, Suite 1300  
Universal City, CA 91608

Tel. Number: 818/505-3100

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

X

FOR \_\_\_\_\_ COMPANY, INC.

Date: 12/20/97 LOUIE GG TOSCANO  
[Name - Please Type]  
FORMER OWNER  
[Title -- Please Type]  
1470 11th St  
[Address -- Please Type]  
LOS BANOS, CALIF 93635  
TO SCAND FORD 4M  
SITE 617-W  
617 WEST Pacific Blvd Calif  
Los Banos  
1470 11th St  
Los Banos  
Mail to: Louie G. Toscano

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: LOUIE G G TOSCANO  
[Please Type]

Title: Owner

Address: 1470 11th St.  
LOS BANOS  
CALIF 93635

Tel. Number: 209-876-7409

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

TOYOTA OF MERCED  
FOR \_\_\_\_\_ COMPANY, INC.

BY: 

Date: DECEMBER 23, 1997

ROBERT J. GAESTEL

[Name -- Please Type]

SECRETARY-TREAS.

[Title -- Please Type]

P.O. BOX 819, MERCED, CA. 95341

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: ROBERT J. GAESTEL  
[Please Type]

Title: SECRETARY - TREAS.

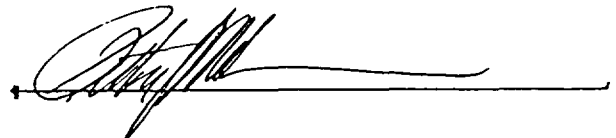
Address: P.O. BOX 819  
1775 - V - STREET  
MERCED, CA. 95341

Tel. Number: 209-725-9000

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Transportation  
Leasing COMPANY, ~~INC.~~



Date: 1-8-98

Peter J. Novak

[Name -- Please Type]

Vice President and General Counsel

[Title -- Please Type]

1850 N. Central Ave., Phoenix, AZ 8 7

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Same as above

Name: \_\_\_\_\_  
[Please Type]

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

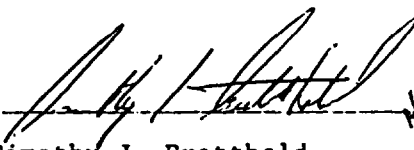
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United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR ULTRAMAR DIAMOND SHAMROCK CORPORATION

Date: January 28, 1998

BY:   
Timothy J. Fretthold  
[Name -- Please Type]  
Executive Vice President  
[Title -- Please Type]  
P.O. Box 696000, San Antonio, TX 78269  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Harold D. Mallory  
[Please Type]

Title: Assistant General Counsel  
Ultramar Diamond Shamrock Corporation  
Address: P. O. Box 696000  
San Antonio, Texas 78269-6000

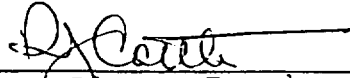
Tel. Number: (210) 592-4470

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Union Carbide Corporation

Date: January 8, 1998  
XXXXXXXXXX, XXXXXX

 p83  
[Name -- Please Type] R. J. Cottle  
Vice President,  
Health, Safety & Environment  
[Title -- Please Type]  
39 Old Ridgebury Rd, Danbury, CT 06817  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:



Name: Martha J. Friar, Esq.  
[Please Type]  
Title: Senior Litigation Counsel  
Address: Praxair, Inc.  
39 Old Ridgebury Road  
Danbury, CT 06810-5113  
Tel. Number: (203) 837-2114

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR \_\_\_\_\_ ~~XXXXXXXXXXXX~~  
UNION OIL COMPANY OF CALIFORNIA DBA UNOCAL

Date: January 12, 1998

   
[Name -- Please Type]  
General Manager, Asset Management Group  
[Title -- Please Type]  
376 S. Valencia Ave., Brea, CA 92823  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Brendan M. Dixon  
[Please Type]  
Title: Associate General Counsel  
Address: Unocal Corporation  
376 S. Valencia Avenue  
Brea, CA 92823  
Tel. Number: 714-577-2933

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

RAILROAD COMPANY  
FOR UNION PACIFIC COMPANY, --INC--

By: R. L. Stacy

Date: JANUARY 14, 1998

R. L. STACY

[Name -- Please Type]

DIRECTOR OF SPECIAL PROPERTIES--  
[Title -- Please Type] REAL ESTATE

1200 Corporate Center Drive

[Address -- Please Type]

Monterey Park, CA 91754

Approved as to Form

R. L. Stacy

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Linda J. Mather  
[Please Type]

Title: Secretary

Address: Union Pacific Railroad Company  
10031 Foothills Blvd.  
Roseville, CA 95747

Tel. Number: (916) 789-6411



United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR United Parcel Service ~~COMPANY~~, INC.

Date: December 26, 1997

*Linda K. DiSantis*

[Name -- Please Type]

Linda K. DiSantis, Vice President

[Title -- Please Type]

55 Glenlake Pkwy., N.E. Atlanta, GA 30328

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Kimberly S. McGovern, Esq.

[Please Type]

Title: \_\_\_\_\_

Address: Gibson, Dunn & Crutcher LLP

One Montgomery Street, Telesis Tower  
San Francisco, California 94104

Tel. Number: (415) 393-8340

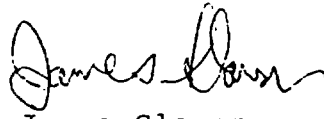
CONSENT DECREE

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

UNITED STATES COLD STORAGE OF CALIFORNIA  
FOR \_\_\_\_\_ ~~COMPANY, INC.~~

Date: January 8, 1998



James Slamon

[Name - Please Type]

Vice President & Chief Financial Officer

[Title -- Please Type]

100 Dobbs Lane, Suite 102, Cherry Hill, NJ

[Address -- Please Type] 08034

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: James Slamon  
[Please Type]

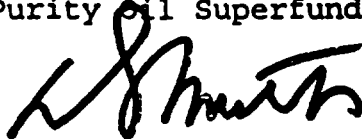
Title: Vice President & Chief Financial Officer

Address: 100 Dobbs Lane, Suite 102  
Cherry Hill, NJ 08034

Tel. Number: 609-354-8181

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.



FOR ADM MILLING CO., Successor to VALLEY GRAIN PRODUCTS, INC.

Date: December 22, 1997

D. J. Smith

[Name - Please Type]

Vice President and Secretary

[Title -- Please Type]

P. O. Box 1470, Decatur, IL 62525

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: D. J. Smith

[Please Type]

Title: Vice President and Secretary

Address: P. O. Box 1470

Decatur, Illinois 62525

Tel. Number: (217) 424-6183

671 0990

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR VALLEY TRUCK  
& TRACTOR COMPANY, INC.

Date: January 16, 1998

*Clayton Amador Pro*

[Name -- Please Type]

[Title -- Please Type]

P.O. Box 3010, Yuba City, CA 95992

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Daniel V. Martinez  
[Please Type]

Title: Attorney

Address: P.O. Box 776  
Yuba City, CA 95992-0776

Tel. Number: (530) 674-9761

United States v. Chevron USA, Inc., et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc., et al., relating to the Purity Oil Superfund Site.

FOR Suburban Propane LP COMPANY, INC., successor to Vantage, Inc.

Date: 1/14/98

Kevin T. McIver Kevin T. McIver

[Name -- Please Type]

Vice President & Secretary

[Title -- Please Type]

240 Route 10 West, Whippany, NJ 07981-0206

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Kevin T. McIver  
[Please Type]

Title: Vice President & Secretary

Address: 240 Route 10 West  
P.O. Box 206  
Whippany, NJ 07981-0206

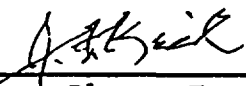
Tel. Number: 973-503-9057

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Vandenberg Motors Inc COMPANY, INC.

Date: January 15, 1998

  
\_\_\_\_\_, James A. Keil  
[Name -- Please Type]  
Vice-Chairman  
\_\_\_\_\_  
[Title -- Please Type]  
2329 Fulton Ave. Sacramento, Ca. 95825  
\_\_\_\_\_  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: \_\_\_\_\_  
[Please Type]

Title: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Tel. Number: \_\_\_\_\_

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR \_\_\_\_\_ COMPANY, INC.

Date: \_\_\_\_\_

1-14-98

Gayle Lopopolo  
[Name -- Please Type]

Gayle Lopopolo -- President

[Title -- Please Type]

4746 E. Florence, Fresno, CA 93725

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Darryl J. Horowitz, Esq.  
[Please Type]

Title: Attorney for Vincent Ganduglia Trucking

Address: 499 W. Shaw Ave., Ste. 116  
Fresno, CA 93704

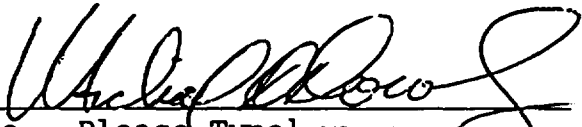
Tel. Number: (209) 248-4820

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR WPS Holding COMPANY, INC.

Date: 12/15/97

  
[Name - Please Type] MICHAEL D. DOWLING  
PRESIDENT

[Title -- Please Type]  
6051 N. Fresno St., #200, Fresno, CA 93710  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: CHRISTOPHER A. BROWN, ESQ.  
[Please Type]

Title: Legal Counsel

Address: 6051 N. Fresno St., #200  
Fresno, CA 93710

Tel. Number: (209) 432-4500



United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

Wheeler Oldsmobile-Cadillac  
FOR \_\_\_\_\_ COMPANY, INC.

Date: 1-14-98



Michael C. Wheeler

[Name -- Please Type]  
President

[Title -- Please Type]  
350 Colusa Ave. Yuba City, Ca. 9599

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Michael C. Wheeler

[Please Type]

Title: President

Address: 350 Colusa Ave.  
Yuba City, Ca. 95991

Tel. Number: 530-673-9160

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

E. L. Winter, Inc. &  
FOR ~~Winter Motor Co., Inc.~~ COMPANY, INC.

Date: 12-18-97

Dale Vaira  
[Name -- Please Type]  
President  
[Title -- Please Type]  
P.O. Box 232210 Sacramento, Ca 95823  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Dale Vaira  
[Please Type]

Title: President

Address: P.O. Box 232210  
Sacramento, Ca 95823  
\_\_\_\_\_  
\_\_\_\_\_

Tel. Number: 916-421-3400

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Woodard Chevrolet COMPANY, INC.

Date: January 2, 1998



Dwight D. Woodard

[Name -- Please Type]  
President

[Title -- Please Type]  
2765 Mankas Corner Road

[Address -- Please Type]  
Suisun, CA 94585

Agent Authorized to Accept Service on Behalf of Above-signed Party:



Dwight D. Woodard

Name: [Please Type]

Title: President

Address: 2765 Mankas Corner Road  
Suisun CA 94585

Tel. Number: (707) 425-6210

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Yuba Community College District ~~COMPANY, INC.~~

Date: 12/17/97



Douglas R. Smith

[Name - Please Type]

Vice President - Business Services

[Title -- Please Type]

2088 N. Beale Rd., Marysville CA 95901

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name: Douglas R. Smith  
[Please Type]

Title: Vice President - Business Services  
Yuba Community College District

Address: 2088 N. Beale Rd.  
Marysville CA 95901

Tel. Number: (530) 741-6800

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

FOR Yosemite Concession Services Corporation

BY:

Gary Fraker

Date:

2/2/98

Gary Fraker

[Name -- Please Type]

President

[Title -- Please Type]

[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-signed Party:

Name:

Michael J. Gallagher

[Please Type]

Title:

Assistant General Counsel

Address:

438 Main Street

Buffalo, New York 14202

Tel. Number: (716) 858-5045

United States v. Chevron USA, Inc. et al.  
Consent Decree Signature Page

THE UNDERSIGNED PARTY enters into this Consent Decree in the matter of United States v. Chevron USA, Inc. et al., relating to the Purity Oil Superfund Site.

Zellerbach, a Division of  
The Mead Corporation  
FOR \_\_\_\_\_ ~~XXXXXXXXXXXX~~

Date: 3/4/98

Peter H. Vogel  
[Name -- Please Type] Peter H. Vogel  
President - Zellerbach, a Division of The  
[Title -- Please Type] Mead Corporation  
P. O. Box 469, Miamisburg, OH 45343  
[Address -- Please Type]

Agent Authorized to Accept Service on Behalf of Above-  
signed Party:

Name: Stephen V. Moser  
[Please Type]  
Title: Associate General Counsel  
Address: The Mead Corporation  
Courthouse Plaza, N.E.  
Dayton, OH 45463  
Tel. Number: 937-495-3893

**RECORD OF DECISION**  
**For The**  
**PURITY OIL SALES, INC.**  
**Superfund Site,**  
**Soils Operable Unit**

**Prepared by**  
**The U.S. Environmental Protection Agency**  
**Region IX**  
**San Francisco, California**

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PURITY OIL SALES RECORD OF DECISION

Soils Operable Unit

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## DECLARATION FOR THE RECORD OF DECISION

### SITE NAME AND LOCATION

Purity Oil Sales Site  
Malaga, California

### STATEMENT OF BASIS AND PURPOSE

This decision document presents the selected remedial action for the Purity Oil Sales site, which was chosen in accordance with the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended by the Superfund Amendments and Reauthorization Act (SARA) and, to the extent practicable, the National Contingency Plan (NCP). This decision is based on the Administrative Record for this site.

The State of California concurs with the selected remedy.

### ASSESSMENT OF THE SITE

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment to public health, welfare, or the environment.

### DESCRIPTION OF THE REMEDY

This operable unit is the second action of two operable units for the site. The first operable unit involved remediation of the groundwater. This second operable unit addresses contaminated soil which is the source of the groundwater contamination. This action addresses the principal threats at the site through a combination of treatment and containment and is considered the final action to be taken by EPA at the site.

The major components of the selected remedy include:

- . Treatment through Soil Vapor Extraction of soils from 14 feet below the surface to the water table;
- . Capping the site in accordance with the Resource Conservation and Recovery Act Subtitle C requirements;
- . Installing a slurry wall around the perimeter of the site;
- . Conducting environmental monitoring to ensure the effectiveness of the remedial action.

### STATUTORY DETERMINATIONS

The selected remedy is protective of human health and the environment, complies with Federal and state requirements that are legally applicable or relevant and appropriate to the remedial action, and is cost-effective. This remedy utilizes permanent solutions and alternative treatment technologies to the maximum extent practicable and satisfies the statutory preference for remedies that employ treatment that reduces toxicity, mobility, or volume as a principal element.

Because this remedy will result in hazardous substances remaining on-site above health-based levels, a review will be conducted within five years after commencement of remedial action to ensure that the remedy continues to provide adequate protection of human health and the environment.

John Wise  
Daniel W. McGovern  
Regional Administrator *for*  
U.S. Environmental Protection Agency,  
Region IX

9.30.92

Date

## DECISION SUMMARY

### I. Site Name, Location and Description

The 6.8 acre Purity Oil Sales site is located approximately one-half mile south of the Fresno city limits, in the township of Malaga, California (Figure 1). The site is in a zone defined as heavy industrial under the Fresno County General Plan. The site is located in a mixed-use area and is surrounded by agricultural and industrial land on the west, a scrap iron yard on the north, a residential trailer park and market on the northeast, a propane distributor on the east, a small farm on the southeast, and a used auto parts business on the south. The North Central Canal flows along the southern boundary of the site (Figure 2).

About one-half mile to the west and southwest of the site are fields of oats, alfalfa, cotton, fruit trees, and grapes. The town of Malaga, which has a medium density residential area, surrounds the site at distances of about one-half mile and more.

The site is located in a non-attainment area for the following air quality standards: ozone, carbon monoxide (CO) and PM-10.

The Purity site and the surrounding areas do not provide habitat for or sustain any rare or endangered species of plant or animal. There are no signs of any significant wildlife or vegetation on the site itself, other than scrub grasses.

All structures on the site have been removed and the site has been partially regraded.

### II. Site History and Enforcement Activities

Waste oil was re-refined at the site from approximately 1934 to 1975. Waste oil was collected from businesses such as service stations, car dealers, truck stops, electrical transformer yards, military facilities, and municipalities. The used oil was re-refined using a number of treatment processes including clarification, chemical addition, dehydration, distillation, and filtration. The oil and by-products from the re-refining process were collected and stored in sumps and storage tanks and were disposed of on-site in unlined sludge pits. A composite diagram of the approximate locations of the buildings, storage areas, and waste disposal areas from 1942 to 1973 is shown in Figure 3.

In 1973, Purity Oil Sales began complying with a Fresno County Superior Court Order to empty and backfill the waste pits. By early 1975, the waste pits had been completely filled with soil and demolition debris. However, no evidence is available to indicate that petroleum wastes stored in the pits were emptied during this period.

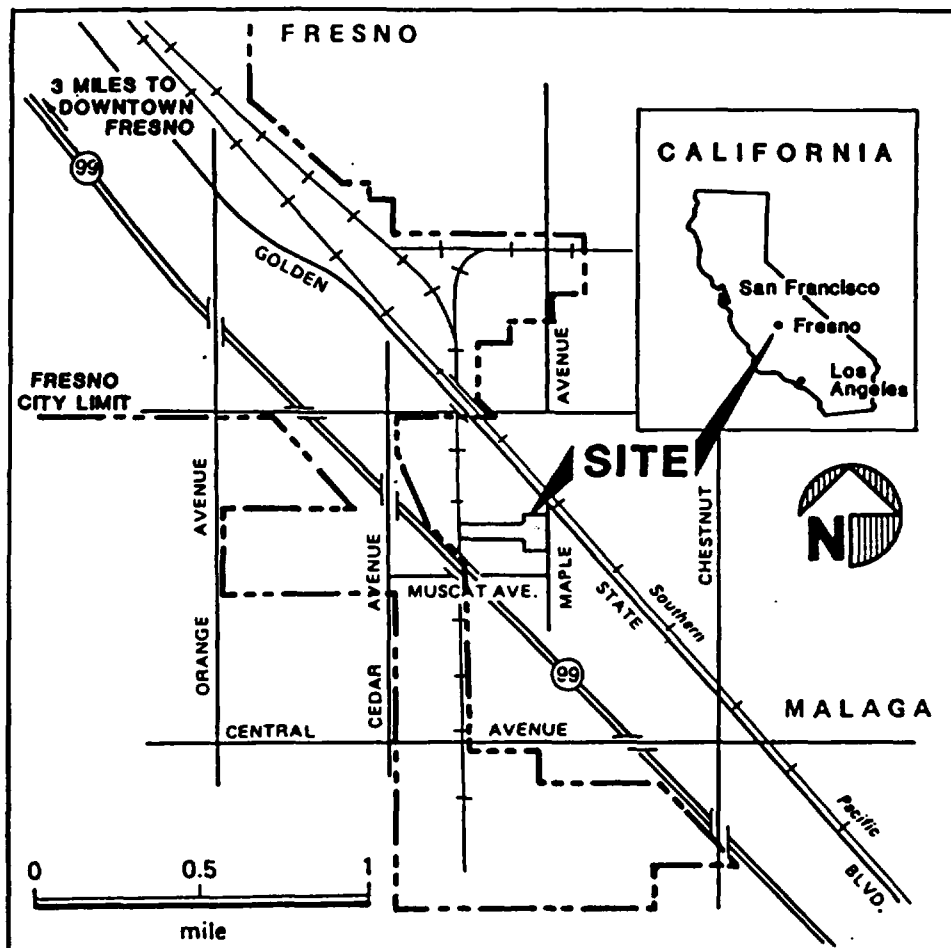


FIGURE 1  
**SITE LOCATION MAP**  
REMEDIAL INVESTIGATION REPORT  
PURITY OIL SALES SITE  
FRESNO, CALIFORNIA

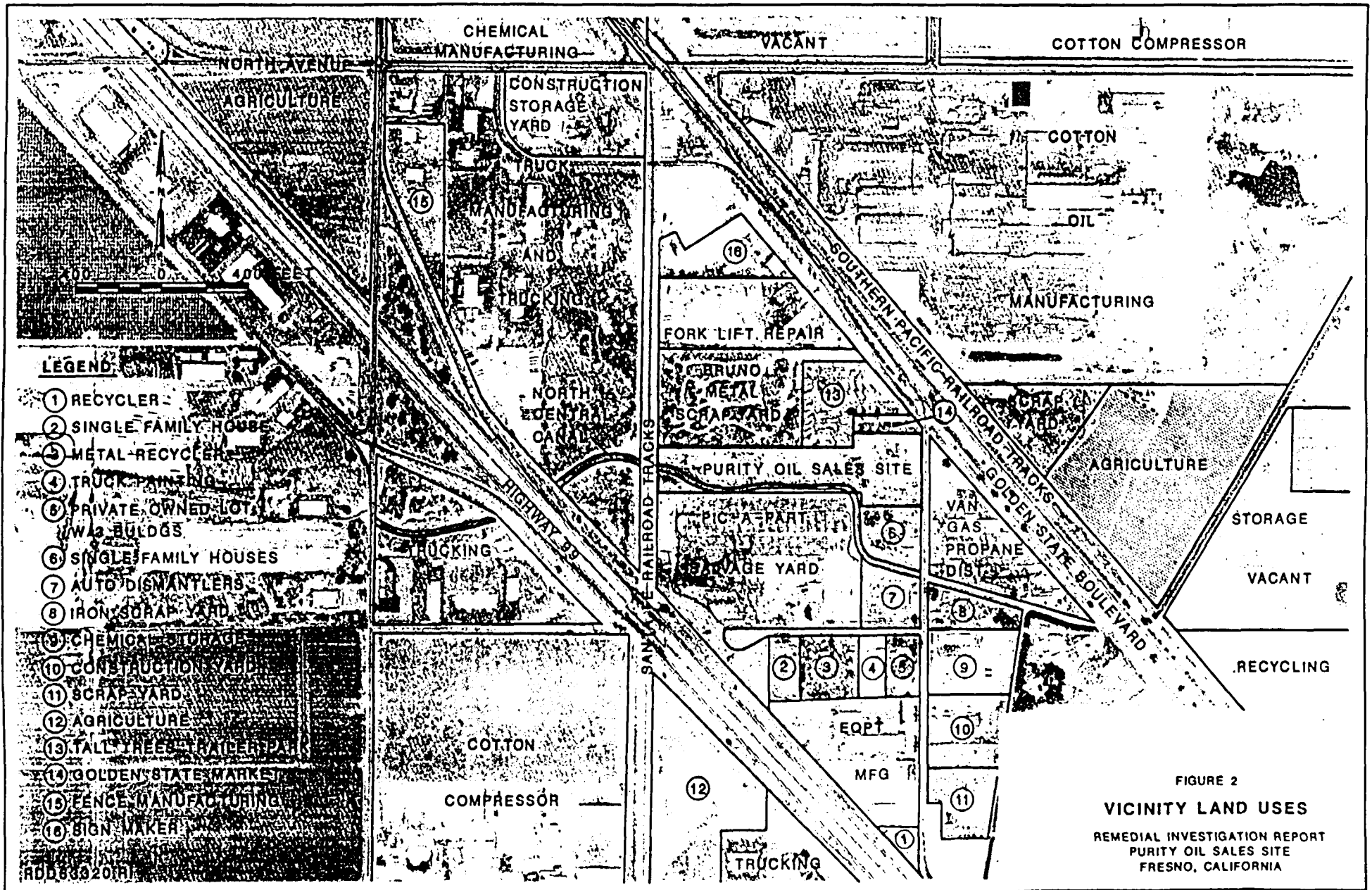
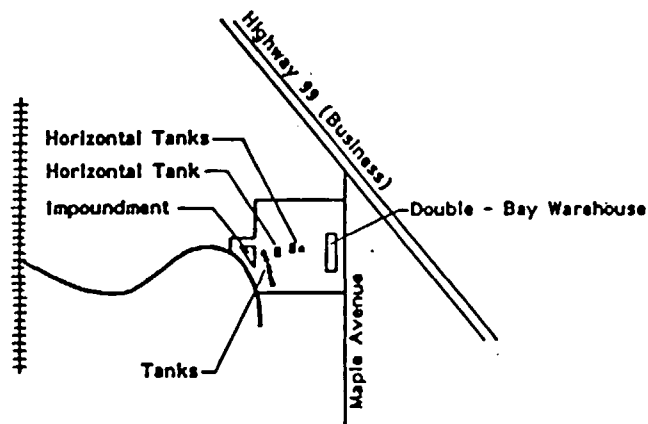
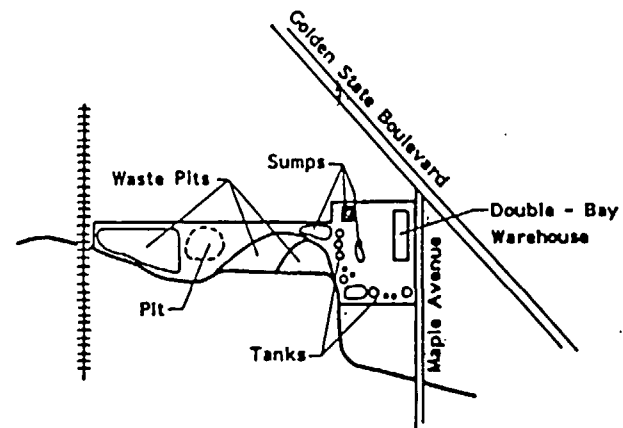


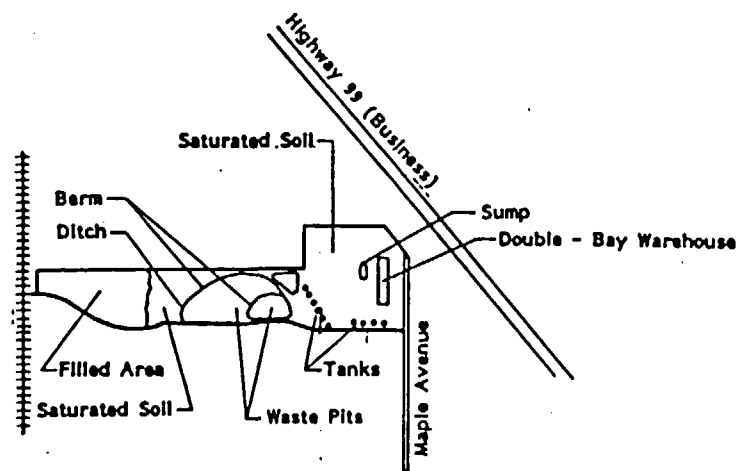
FIGURE 2  
VICINITY LAND USES  
REMEDIAL INVESTIGATION REPORT  
PURITY OIL SALES SITE  
FRESNO, CALIFORNIA



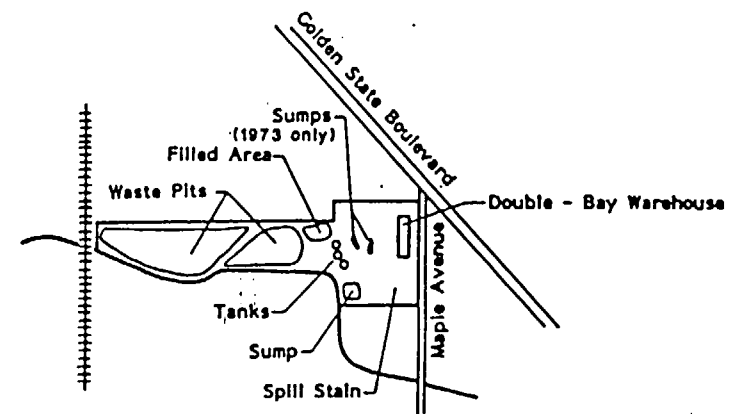
a. May 19, 1942  
Approximate Scale 1:5200



c. 1957 to 1967  
-----Present In 1957 and 1961 Photographs  
[Cross-hatched box] Present In 1957 Photograph Only  
Approximate Scale 1:6000



b. January 31, 1950  
Approximate Scale 1:5300



d. 1970 to 1973  
Approximate Scale 1:6000

FIGURE 3  
SITE LAYOUT 1942 - 1973  
REMEDIAL INVESTIGATION REPORT  
PURITY OIL SALES SITE  
FRESNO, CALIFORNIA

REFERENCE: BACKGROUND REPORT, DOHS 1985

During its history, the re-refining facility changed ownership several times. The original owners were William Dickey and Ray Turner, who operated the facility from 1934 to 1948. In 1948, William Siegfried and Robert Hall purchased the site as Paraco Oil, Inc. The site and facilities were sold to Michael Marcus of Purity Oil Sales, Inc., in 1965. In 1975, Michael Marcus filed for bankruptcy, and the site was held by the State of California for non-payment of taxes. The site was sold to an individual in 1979, who was granted a rescission of the sale in 1982. The site was returned to the custody of the State of California where it remains today. Title of the property was returned to Purity Oil Sales, Inc. in 1984.

In February 1982, the EPA Emergency Response Team, the California Department of Toxic Substances Control (DTSC) and the California Regional Water Quality Control Board carried out a joint site investigation that included soil and groundwater sampling and air emissions monitoring. The site was placed on the National Priorities List in December 1982.

The Department of Toxic Substances Control was designated lead agency for the site and published a Remedial Investigation Report on May 12, 1986. During the state's remedial investigation, EPA's Emergency Response Team removed about 1,800 cubic yards of hazardous material from the site.

In January 1986, EPA assumed the lead for the site and expanded the remedial investigation work performed by the state to include additional soil and groundwater studies.

During September 1987, EPA's Emergency Response Team removed approximately 33,000 gallons of oil and water from one of seven above ground tanks to eliminate the potential for an oil spill.

EPA issued a Remedial Investigation Report in October 1988. A Feasibility Study and a Proposed Plan for Soil and Groundwater were issued in April 1989. The Regional Administrator signed a Record of Decision (ROD) for the Groundwater and Tanks Operable Unit on September 26, 1989.

EPA conducted two remedial actions in accordance with the ROD. In October 1991, seven large above-ground steel tanks and their contents were removed from the site. In March 1992, private well users downgradient of the site were connected to either the Malaga County Water District or the City of Fresno water system.

In May 1992, EPA issued a Soil Solidification Feasibility and Cost Evaluation Report and a Revised Soil Vapor Extraction and Cap Feasibility Study. A Revised Proposed Plan for Soil was issued in June 1992.

General Notice letters for the groundwater operable unit were issued to 108 Potentially Responsible Parties (PRPs) on April 19, 1990. EPA issued Special Notice letters for the groundwater

operable unit to 87 PRPs on April 1, 1991. After EPA and the PRPs failed to negotiate a settlement, EPA issued a Unilateral Administrative Order on September 30, 1991 to the California Department of Transportation, Chevron Corporation, Cummins West, Foster Poultry Farms, Morrison-Knudsen Engineers, Pacific Gas & Electric Company, Phillips Petroleum, Southern Pacific Transportation Company, and Unocal. The Administrative Order required the Respondents to design and construct a groundwater extraction, treatment, and disposal system. EPA issued General Notice letters for the soils operable unit on June 5, 1992 to the existing 87 PRPs and to 59 additional PRPs.

### III. Highlights of Community Participation

The Remedial Investigation (RI) Report, the Feasibility Study (FS) Report, the Soil Solidification Feasibility and Cost Evaluation Report, the Revised Soil Vapor Extraction and Cap Feasibility Study, and the Revised Proposed Plan for Soil were released to the public in June 1992. These documents were made available to the public in both the Administrative Record and the information repository maintained at the Superfund Records Center in Region 9 and at the Fresno Central Library. The notice of the availability of these two documents was published in the Fresno Bee on June 8, 1992 and in the Spanish language newspaper Vida En El Valle on June 17, 1992. A public comment period was held from June 8, 1992 through July 10, 1992. A request for an extension to the public comment period was made by the California Department of Toxic Substances Control and the San Joaquin Valley Unified Air Pollution Control District. As a result, the public comment period was extended to August 10, 1992.

A public meeting was held on June 22, 1992. At this meeting, representatives from EPA answered questions about problems at the site and the remedial alternatives under consideration. A response to the comments received during this period is included in the Responsiveness Summary.

This decision document presents the selected remedial action for the Purity Oil Sales site in Malaga, California, chosen in accordance with CERCLA, as amended by SARA, and, to the extent practicable, the National Contingency Plan. The decision for this site is based on the Administrative Record.

### IV. Scope and Role of Operable Unit

As with many Superfund sites, the problems at the Purity Oil Sales site are complex. As a result, EPA organized the work into two operable units (OUs). These are:

- . OU One: Contamination of the groundwater
- . OU Two: Contamination in the soils.

EPA has already selected a groundwater treatment remedy for OU One in a ROD signed September 26, 1989. The OU One action is in the



remedial design stage and is being performed by PRPs under an Administrative Order. This ROD is for OU Two and addresses contaminated soil.

#### **V. Summary of Site Characteristics**

Soil contamination extends from the surface to the groundwater table, with the most highly contaminated layers occurring between 0-14 feet, in the location of the former waste pits. A cross section of site soils is shown in Figure 4.

Contaminated surface soils extend vertically to a depth of two feet and are defined as the eastern 2.5 acres of the site where the office and warehouses were located. Waste pits were not located in this area. These surface soils are contaminated with organic compounds, pesticides, oil and grease, and a variety of metals.

The levels of organic compounds in the surface soils are generally below the California Total Threshold Limit Concentration (TTL) values for definition as a state hazardous waste. The pesticide concentration for 4,4-DDT exceeds the California TTL value in one location. Four locations had PCB concentrations up to 11 parts per million (ppm), which is well below the TTL value of 50 ppm. For inorganics, all metals except lead were detected at concentrations below the TTL. The TTL value for lead is 1,000 ppm. Lead concentrations range from 18,000 ppm to 27,000 ppm in surface soil. The pH of on-site surface soil samples vary from 0.9 to 8.1.

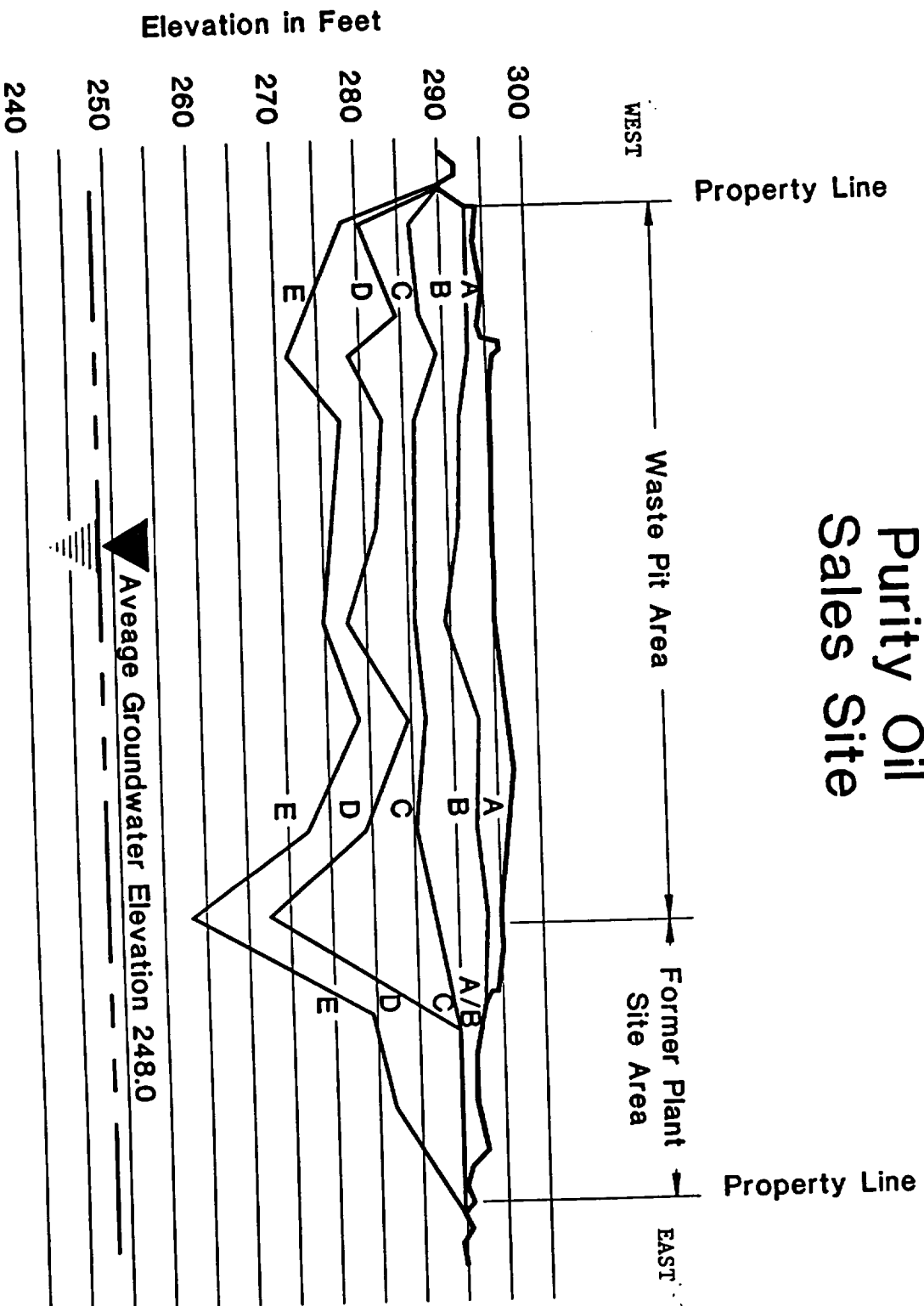
The surface soils have not been determined to be RCRA listed waste or RCRA characteristic waste based on the EP Toxicity test. TCLP has replaced EP Toxicity as the test method used by EPA to determine the leachability of toxic constituents. Toxicity is one characteristic that defines a waste as a Resource Conservation and Recovery Act (RCRA) hazardous waste. A Toxicity Characteristic Leaching Procedure (TCLP) test was not conducted for surface soils.

The waste pit area contains numerous organic compounds, including benzene, toluene, polyaromatic hydrocarbons (PAHs), methylene chloride, phthalates, acetone, and numerous solvents. Below the waste pits, the organic compound concentrations decrease rapidly. Concentration levels range from < 10 to 50,000 ppm. Toluene was detected in most waste pit locations onsite, in concentrations ranging from 0.004 to 4,200 ppm. Toluene was also detected in off-site background borings. This off-site contamination is present north, south, and west of the site.

Samples from the waste pit area indicate elevated lead values and low pH values less than or equal to 2. The maximum concentration of lead in the buried waste is 19,600 ppm. The mean concentration of lead in the buried waste is 695 ppm. The state TTL (1,000 ppm) and Soluble Threshold Limit Concentration (STLC) standard (5 ppm) for lead are exceeded. The state TTL standard for organic lead (13 ppm) is also exceeded. The waste in layers B and C is RCRA characteristic based on exceedence of the federal TCLP standard of

# Site Cross Section

## Purity Oil Sales Site



5.0 ppm for lead. Figures 5-4 through 5-23 in the RI present the chemical investigation results from soil borings.

Lead concentrations in samples taken from locations along the slopes of the North Central Canal above the water surface ranged from 1,200 ppm to 13,000 ppm and exceed the state TTL standard for lead of 1,000 ppm.

#### **VI. Summary of Site Risks**

The baseline risk assessment provides the basis for taking action and indicates the exposure pathways that need to be addressed by the remedial action. It serves as the baseline indicating what risks could exist if no action were taken at the site. This section of the ROD provides the results of the baseline risk assessment conducted for this site.

The particular chemicals of concern identified in the risk assessment are listed in Table 1. The toxicity profiles of the chemicals of concern are included in the Public Health Evaluation (CH2M Hill, 1989).

Acute toxic effects of lead, the primary soil contaminant, include encephalopathy, abdominal pain, hemolysis, liver damage, renal tubular necrosis, seizures, coma and respiratory arrest. Chronic exposure can affect the hematopoietic system, the nervous system, and the cardiovascular system. Lead inhibits several key enzymes involved in heme biosyntheses. One characteristic effect of chronic lead intoxication is anemia, by reduced hemoglobin production and shortened erythrocyte survival. In humans, lead exposure has resulted in nervous system injury including reduced hand-eye coordination, reaction time, visual motor performance, and nerve conduction velocity. Children appear especially sensitive to lead-induced nervous system injury. Lead can also affect the immune system and produce gingival lead lines. Epidemiological studies have indicated that chronic lead exposure may be associated with increased blood pressure in humans. Exposure to lead is associated with sterility, abortion, neonatal mortality, and morbidity. Organolead compounds are neurotoxic.

The exposure pathways of concern that were evaluated for potential health risks are 1) direct contact with contaminated site soils by trespassers and future on-site workers or residents, 2) inhalation of site dusts by current near-site residents or workers, and future on-site residents or workers, and 3) direct contact with contaminated canal sediments by trespassers, farm workers, and irrigation district workers.

The risks for the site were calculated for both on-site residential and occupational exposure. However, since the site is located in an area that is zoned industrial, it is unlikely that there will be future residential uses on-site. Residential exposure was assumed to occur 24 hours a day, 365 days a year for a 70-year period. Occupational exposure was assumed to occur five days per week for

Table 1  
CONTAMINANTS OF CONCERN AT THE  
PURITY OIL SITE

Acetone	Mercury
Aldrin	4-Methyl-2-pentanone
Antimony	2-Methyl phenol
Arsenic	4-Methyl phenol
Barium	Napthalene
Benzene	N-nitrosodiphenylamine
Benzoic acid	PAHs <sup>a</sup>
Beryllium	PCBs <sup>b</sup>
Beta-BHC	Phenol
Bis(2-ethylhexyl)phthalate	Selenium
2-Butanone	Silver
Cadmium	Styrene
Carbon disulfide	Tetrachloroethene
Carbon tetrachloride	Toluene
Chlorobenzene	1,1,1-Trichloroethane
Chloroform	1,1,2-Trichloroethane
Chromium	Trichloroethene
Cyanide	Vanadium
4,4-DDD	Vinyl chloride
4,4-DDE	Xylenes
4,4-DDT	Zinc
Di-n-butyl phthalate	
1,1-Dichloroethane	
1,1-Dichloroethene	
1,2-Dichloroethane	
Dieldrin	
Diethyl phthalate	
Endosulfan	
Ethylbenzene	
Gamma-BHC (Lindane)	
Heptachlor	
Heptachlor epoxide	
Lead	
Methylene chloride	
N-nitrosodiphenylamine	

<sup>a</sup> PAHs which are considered carcinogenic are assessed as a group (Benzo[a]anthracene, Benzo[k]fluoranthene and Chrysene).

<sup>b</sup> PCBs are assessed as a group (Arochlor 1248, Aroclor 1254, Aroclor 1260)..

a 40 year period.

These calculations result in numbers called risk levels, which express the risk in terms of the chance of cancer occurring. A risk level of 1 in 1,000,000 means that one person out of one million people so exposed could develop cancer as a result of the exposure. This risk level is expressed in scientific notation as  $1 \times 10^{-6}$ .

For a Superfund project, EPA's goal is to reduce risk for a site to within or above the range of 1 cancer in 10,000 ( $1 \times 10^{-4}$ ) to 1 in 1,000,000 ( $1 \times 10^{-6}$ ) persons.

For non-carcinogens (chemicals that do not cause cancer but may cause other adverse health effects), the risk level is calculated in terms of the Hazard Index (HI). The Hazard Index is a numerical indicator of the transition between acceptable and unacceptable exposure to multiple chemicals. If the HI exceeds 1.0, unacceptable non-carcinogenic health effects may result (e.g., kidney or liver disfunction). When the HI is less than 1.0, insignificant adverse health effects are expected.

#### Surface Soil and Buried Waste

The data summary for chemicals of concern in surface soil is shown in Table 2. The data summary for chemicals of concern in deep on-site soils is shown in Table 3.

Carcinogenic risk associated with both the surface soil and the buried waste was determined to be within, or below, the acceptable risk range. Risks for surface soil ingestion ranged from  $3 \times 10^{-6}$ , (most probable occupational) to  $7 \times 10^{-5}$  (worst case adult residential). Risk associated with deep soil ingestion was calculated to be  $6 \times 10^{-7}$ , most probable occupational exposure.

Hazard Indexes calculated for potential surface soil exposure through ingestion range from 2.8 (worst case adult residential; worst case occupational) to 39.4 (worst case 10-kg child residential exposure). The Hazard Index of soil below 1 foot was less than 1.0.

#### Canal Sediment

Contaminant concentrations in canal sediments are summarized in Table 4. Lead accounts for over 98 percent of the hazard indexes for adult (HI = 3.95), 35-kg child (HI = 15.8) and 10-kg child (HI = 55.3) worst case exposure scenarios. The potential carcinogenic risks estimated for exposure to canal sediments through ingestion range from  $6 \times 10^{-8}$  (most probable adult occupational) to  $2 \times 10^{-6}$  (worst case adult trespass).

Actual or threatened releases of hazardous substances from this site, if not addressed by implementing the response action selected in this ROD, may present an imminent and substantial endangerment

Table 2  
DATA SUMMARY FOR CHEMICALS OF CONCERN IN SURFACE SOILS

Chemical of Concern	Observed Concentrations		Standard Deviation	Number of Detections/ Number of Samples
	Maximum (ug/kg)	Mean (ug/kg)		
Aldrin	100	78	20	03/27
Antimony	8,400	3,300	1,000	01/27
Arsenic	22,000	8,500	5,700	26/27
Barium	1,120,000	295,500	306,000	27/27
Beryllium	1,500	600	200	03/27
Beta BHC	85	81.5	4.9	2/27
Bis(2-ethylhexyl)phthalate	7,800	--	--	01/27
Cadmium	17,000	3,800	3.3	27/27
Chromium	43,000	17,000	9,800	27/27
4,4-DDD	150	89.4	51.9	05/27
4,4-DDE	1,525	195	413	04/27
4,4-DDT	590	177	277	04/27
Dieldrin	350	139	183	03/27
Diethyl phthalate	150	--	--	01/27
Endosulfan	540	215	423	04/27
Heptachlor	170	102	212	01/27
Heptachlor epoxide	1,400	187	357	08/27
Lead	14,300,000	2,669,000	4,709,000	27/27
Mercury	900	190	210	16/27
PCB	12,400	4,045	4,883	05/27
Phenol	50,000	22,000	28,000	01/27
Silver	2,400	800	300	01/27
Zinc	1,410,000	344,900	417,000	27/27

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Table 3  
DATA SUMMARY FOR CHEMICALS OF CONCERN IN  
DEEP ONSITE SOILS

Chemical of Concern	Observed Concentrations		Standard Deviation	Number of Detections/ Number of Samples
	Maximum (ug/kg)	Mean (ug/kg)		
Acetone	7,200	1,270	3,571	09/74
Barium	2,250,000	202,200	449,000	68/68
2-butanone	8,700	720	2,380	17/70
Bis(2-ethylhexyl)phthalate	12,000	3,345	5,301	12/67
Cadium	2,100	600	300	09/68
Carbon disulfide	770	247	357	03/23
Chlorobenzene	2,900	245	731	17/77
Chloroform	310	38	74	22/74
1,1-Dichloroethane	1,100	133	285	02/17
1,2-Dichloroethane	960	36.6	147.9	2/77
Ethylbenzene	19,000	882	2,672	25/77
Lead	11,700,000	695,000	2,220,000	67/68
Methylene chloride	620	284	218	06/74
4-Methyl -2-Pentanone	9,100	626	1,465	20/56
2-Methyl phenol	1,100	657	401	03/31
4-Methyl phenol	56,000	4,612	9,049	09/52
Naphthalene	91,000	6,682	13,040	23/77
PAHs	102,000	9,049	12,342	5/76
PCBs	1,975	544	837	3/23
Phenol	99,000	4,811	14,211	13/63
Selenium	1,200	600	600	03/68
Tetrachloroethene	3,200	310	736	24/100
Trichloroethene	10	6.8	2.4	29/77
1,1,1-Trichloroethane	4,100	201	771	05/74
Toulene	20,000	1,459	3,656	64/77
Xylene	120,000	6,485	19,275	30/62
Zinc	616,000	71,000	103,000	68/68

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Table 4  
DATA SUMMARY FOR CHEMICALS OF CONCERN IN CANAL SEDIMENTS

Chemical of Concern	Observed Concentrations		Standard Deviation	Number of Detections/ Number of Samples
	Maximum (ug/kg)	Mean (ug/kg)		
Barium	1,770,000	645,000	625,000	10/10
Beryllium	1,300	600	200	01/10
Bis(2-ethylhexyl)phthalate	100,000	38,300	34,490	02/10
Cyanide	4,400	1,320	1,100	10/10
4,4-DDD	280	80	133	04/10
4,4-DDE	19	--	--	01/10
Dieldrin	130	104	56	01/09
Endosulfan	230	149	272	01/10
Gamma BHC (Lindane)	84	47	32	01/09
Heptachlor	77	48	33	01/09
Heptachlor epoxide	1,400	210	425	04/10
Lead	13,200,000	3,815,000	5,017,000	10/10
Mercury	200	70	50	01/10
Naphthalene	54,000	29,500	23,699	02/10
Zinc	1,260,000	262,000	430,000	10/10

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to public health, welfare, or the environment.

## **VII. Description of Alternatives**

A detailed evaluation of the alternatives for treatment of soil is presented in the April 12, 1989 Feasibility Study, the May 1992 Soil Solidification Feasibility and Cost Evaluation and the May 1992 Revised Soil Vapor Extraction and Cap Feasibility Study. Alternatives selected for discussion in the June 1992 Revised Proposed Plan for Soil are listed below.

Actual levels of soil contaminants vary with depth throughout the site. It should be noted that the 0-14 feet and 14-40 feet soil layers discussed are approximate levels only. Actual cleanup will depend on the depth of contamination at specific locations.

### **Alternative 1: No Action**

The No Action Alternative serves as a "baseline" for developing the risk assessment, and its evaluation is required by law. It assumes that no action would occur at the site, allowing unrestricted access to contaminated soils.

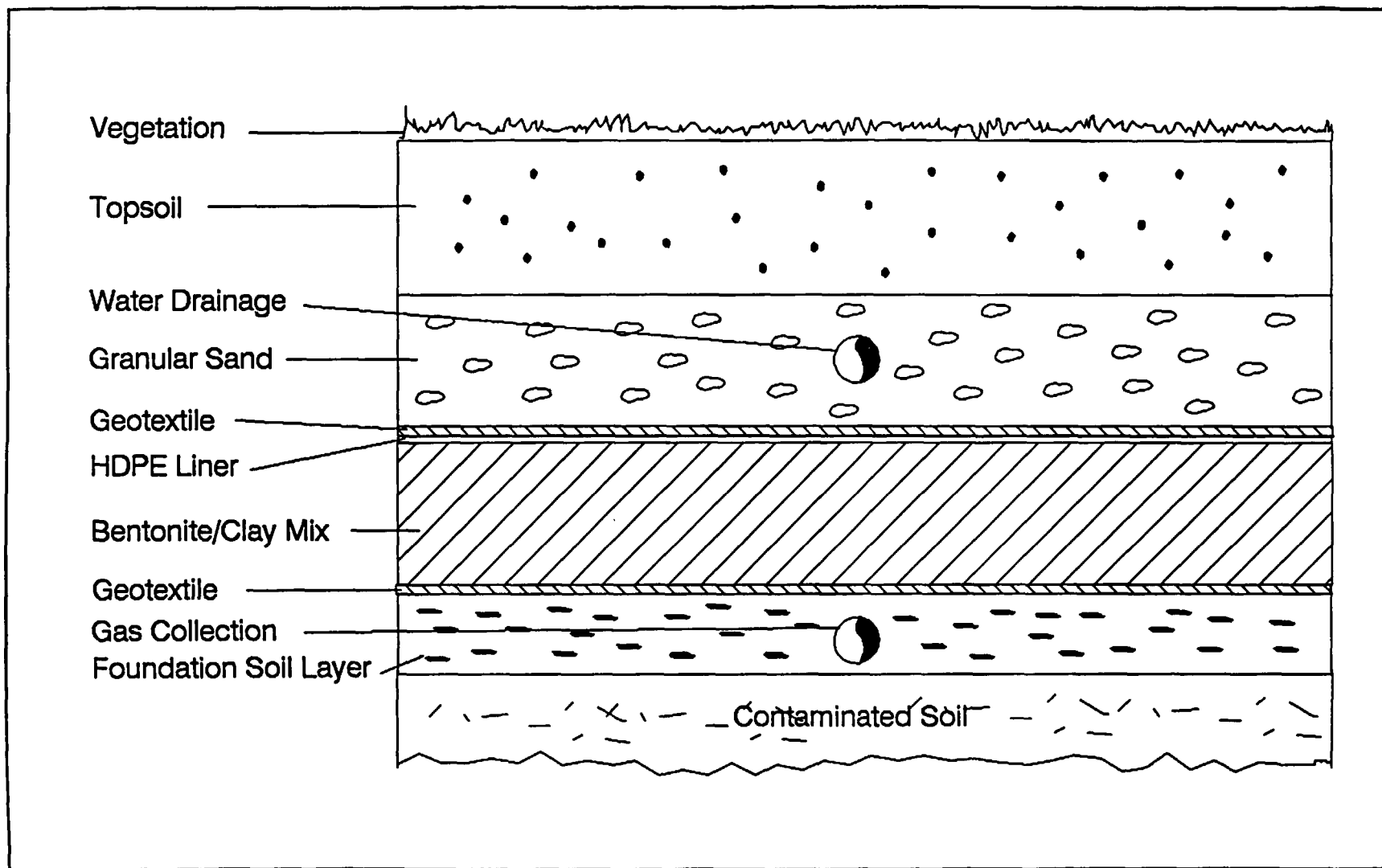
### **Alternative 2: RCRA Equivalent Cap**

Major Components of the Remedial Alternative. The major features of this alternative include covering the site with a multi-layer RCRA equivalent cap, and enclosing the North Central Canal in a reinforced concrete pipe.

**Containment Components:** The 6.8 acre site would be capped and closed as a RCRA Subtitle C landfill in accordance with the requirements specified in 22 CCR 66264.310 for landfill closure, which require a cap to have a permeability less than or equal to the permeability of the natural underlying soil.

The cap would be designed and constructed to promote drainage, minimize erosion of the cover, and provide long-term minimization of migration of liquids through the underlying soils. Consistent with the requirements of 22 CCR 66264.117, long-term operation and maintenance (O&M) would be conducted to monitor groundwater and to insure the integrity of the cap.

The cap proposed for the site (Figure 5) would consist of a 1 foot foundation layer, 2 feet of bentonite/clay mix, a high density polyethylene liner, 1 1/2 feet of sand followed by 2 feet of top soil, and a gas/drainage collection system. The total height of the cap would be 7 feet. A retaining wall to provide slope stability would be constructed around the cap. The top of the wall would be 5 feet above grade. The wall is anticipated to be 2 feet thick.



**Figure 5: RCRA Equivalent Cap**

### **Alternative 3: Soil Vapor Extraction (SVE) and RCRA Equivalent Cap with Slurry Walls**

Major Components of the Remedial Alternative. The major features of this alternative include treating soils from 14 feet to the water table with Soil Vapor Extraction (SVE), constructing a slurry wall, covering the site with a multi-layer RCRA equivalent cap, constructing a retaining wall to support the cap, and enclosing the North Central Canal in a reinforced concrete pipe.

**Treatment Components:** Soil Vapor Extraction (Figure 6) is a process in which organic contaminants are volatilized from the soil, using a series of on-site air injection wells and extraction wells. The extracted Volatile Organic Compounds (VOCs) are then treated by carbon adsorption prior to discharge to the air. Carbon adsorption is a treatment system where the volatilized contaminants are forced through tanks containing activated carbon, a specially treated material that attracts the contaminants. The contaminants cling to the carbon, and the air leaving the system would meet air quality standards.

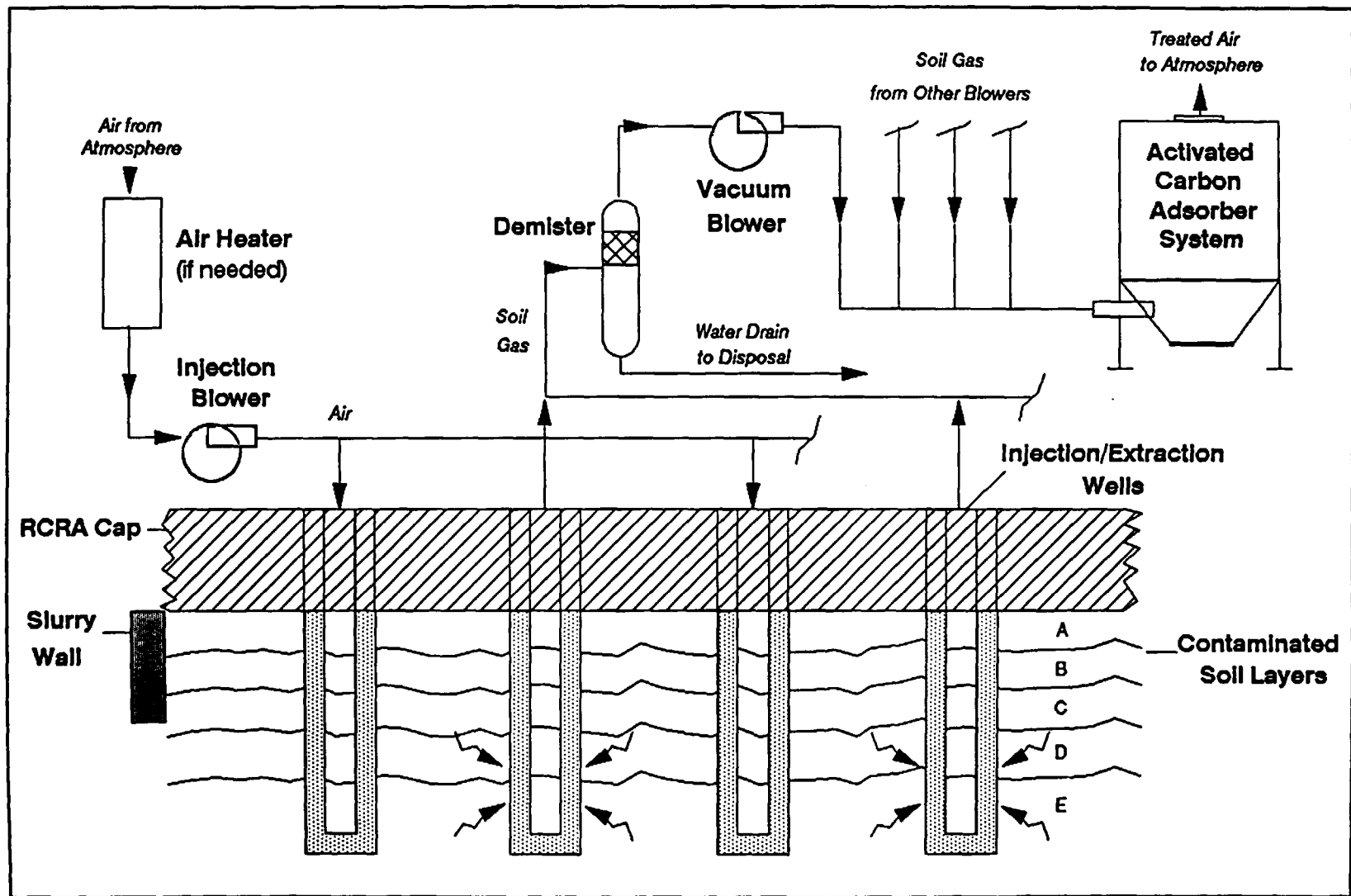
Soil from 0-14 feet is contaminated with oil and grease which would greatly inhibit the effectiveness of SVE wells. Therefore, SVE wells will treat soil from 14 feet to the water table. A significant amount of the VOCs in soil deeper than 14 feet (approximately 24,387 pounds) would be removed by the action of the SVE system. Approximately 25% or 17,950 pounds of VOCs in soil from 0-14 feet are expected to be drawn into the lower layers of soil and be treated by the SVE system. The SVE wells would be drilled through the RCRA cap and screened in Layers C, D, and E. The SVE system would operate in place underneath the cap.

**Containment Components:** Soil from 0-14 feet would be covered by a RCRA equivalent cap and surrounded by a slurry wall. See Alternative 2 for a discussion of a RCRA equivalent cap. A slurry wall acts as an underground barrier, surrounding the contaminated soil. The slurry wall, constructed of clay and soil, would be 25 feet deep which is 10 feet below the deepest level of Layer B, the most highly contaminated layer of soil.

### **Alternative 4: Excavation and On-site Incineration of Soil at 0-14 feet, SVE and Capping**

Major Components of the Remedial Alternative. The major features of this alternative include excavation and treatment of soils at 0-14 feet with on-site incineration, stabilization of the incineration ash, treatment of soils from 14-40 feet with SVE, and covering the site with a soil and clay cap.

**Treatment Components:** Approximately 64,000 cubic yards of contaminated soil and canal sediment would be excavated and treated through rotary kiln incineration. The incineration process would destroy 99.99% of the principal organic hazardous constituents (POHCs) in soil from 0-14 feet. The results of a rotary kiln



**Figure 6 Soil Vapor Extraction System**

incineration treatability study demonstrated that ash from the incinerator would fail the TCLP standard for lead. Therefore, ash would be solidified to immobilize lead in compliance with the Land Disposal Restrictions (LDR) treatment standard for lead of 5.0 milligrams/liter (mg/l).

Soil from 14-40 feet would be treated through SVE. See Alternative 3 for a discussion of SVE.

**Containment Components:** The site would be covered with a soil and clay cap. The soil and clay cap would consist of a 2 foot silty sand foundation layer, 2 to 3 feet of gravel and bentonite/clay mix, a 1 to 2 foot drainage sand layer followed by a 2 foot layer of top soil. The cap would be 8 feet high and would contain a drainage collection system.

**Alternative 5: Excavation and Solidification of Soil at 0-10 Feet, SVE and Capping**

**Major Components of the Remedial Alternative:** The major features of this alternative include excavation and treatment of soils at 0-10 feet with on-site solidification, treatment of soil from 14-40 feet with SVE and covering the site with a soil and clay cap.

**Treatment Components:** Approximately 38,000 cubic yards of material from Layer A and canal sediment would be excavated. Rubble larger than 3 feet in size would be removed from the excavated material and later returned to the excavation and backfilled with solidified material. The excavated material would be fed directly to a thermal unit to remove VOCs. The exhaust gas from the thermal unit would be treated in a venturi scrubber and a carbon adsorption system to remove particulates, sulfur dioxide, and VOCs. The material discharged from the thermal unit would be further screened to remove debris larger than 4 to 6 inches. This debris would also be backfilled with solidified material. The soil from the thermal unit would be transferred to a rotary mixer/blender (pugmill). Solid additives would be metered from storage bins or silos and fed to the pugmill. Similarly, measured flows of a liquid reagent would be fed into the pugmill. After mixing in the pugmill for a predetermined period, the processed soil would be discharged and placed back in the excavation.

Soils from 14-40 feet would be treated using SVE. See Alternative 3 from a discussion of SVE.

**Containment Components:** A soil and clay cap would be constructed over the stabilized material. See Alternative 4 for a discussion of the cap. The increase in site elevation due to solidification alone would be 2 feet. The total increase in site elevation due to solidification and installation of the cap would be 9 1/2 feet.

**Alternative 6: Excavation and Solidification of Soil at 0-14 feet, SVE and Capping**

**Major Components of the Remedial Alternative.** The major features of this alternative include excavation and treatment of soils at 0-14 feet with on-site solidification, treatment of soil at 14-40 feet with SVE and covering the site with a soil and clay cap.

**Treatment Components:** The treatment components for this alternative are similar to alternative 5. Approximately 64,000 cubic yards of material from Layers A and B and canal sediment would be excavated and treated in the thermal unit and then solidified.

**Containment Components:** A soil and clay cap would be constructed over the stabilized material. See Alternative 4 for a discussion of the cap. The increase in site elevation due to solidification alone would be 3 1/2 feet. The total increase in site elevation due to solidification and installation of the cap would be 11 feet.

**Alternative 7: Excavation and Solidification of Soil Exceeding 500 ppm Lead, SVE and Capping**

**Major Components of the Remedial Alternative.** The major features of this alternative include excavation and solidification of soils containing lead in excess of 500 ppm, treating the remaining soil with SVE, and covering the site with a soil and clay cap.

**Treatment Components:** The treatment components of this alternative are identical to Alternative 5. Approximately 69,680 cubic yards of soil containing lead in excess of 500 ppm and canal sediment would be excavated and treated in the thermal unit and then solidified.

**Containment Components:** A soil and clay cap would be constructed over the stabilized material. See Alternative 4 for a discussion of the cap. The increase in site elevation due to solidification alone would be 3/4 feet. The total increase in site elevation due to solidification and installation of the cap would be 11 1/4 feet.

**Alternative 8: Excavation and Off-Site Treatment and Disposal of Soil at 0-14 Feet, SVE and Capping**

**Major Components of the Remedial Alternative.** The major features of this alternative include excavation of soil from 0-14 feet and treatment and disposal at an off-site landfill, treatment of soil from 14-40 feet with SVE, and covering the site with a soil and clay cap.

**Treatment Components:** Approximately 64,000 cubic yards of contaminated soil and canal sediment would be excavated and transported off-site for treatment and disposal at a permitted hazardous waste disposal facility.

Soil from 14-40 feet would be treated using SVE. See Alternative 3 for a discussion of SVE.

Containment Components: The site would be covered with a soil and clay cap. See Alternative 5 for a discussion of the cap.

Table 5 provides cost estimates and cleanup times for each of the alternatives.

#### **VIII. Nine Evaluation Criteria**

EPA uses nine criteria, or standards, to evaluate alternatives for cleaning up a National Priorities List site. The nine criteria are summarized below:

**1. Overall Protection of Human Health and the Environment**

Addresses whether or not a remedy provides adequate protection and describes how risks posed through each pathway are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

**2. Compliance with Applicable or Relevant and Appropriate Requirements (ARARs)**

Addresses whether or not a remedy will meet all federal and state environmental laws and regulations, or provide grounds for waiving a particular ARAR.

**3. Long-term Effectiveness and Permanence**

Refers to the ability of a remedy to maintain reliable protection of human health and the environment over time, once cleanup goals have been met.

**4. Reduction of Toxicity, Mobility and Volume (TMV) through Treatment**

Refers to the ability of a remedy to reduce the toxicity, mobility, and volume of the hazardous components present at the site.

**5. Cost - 30-year present worth**

Evaluates the estimated capital, operation and maintenance costs of each alternative.

**6. Short-Term Effectiveness**

Addresses the period of time needed to complete the remedy, and any adverse impact on human health and the environment that may be posed during the construction and implementation period, until the cleanup standards are achieved.

**7. Implementability**

Refers to the technical and administrative feasibility of

**TABLE 5**

<b>Alternative</b>	<b>Project Cost</b>	<b>Capital Cost</b>	<b>Annual Operation and Maintenance Cost</b>	<b>Estimated Cleanup Time in Years</b>
<b>#2 RCRA Equivalent Cap</b>	<b>\$24,686,000</b>	<b>\$8,016,000</b>	<b>\$736,000</b>	<b>2</b>
<b>#3 SVE &amp; RCRA Equivalent Cap</b>	<b>\$36,254,000</b>	<b>\$17,023,000</b>	<b>\$741,000</b>	<b>9.4</b>
<b>#4 Incineration, 0-14 feet, SVE &amp; Cap</b>	<b>\$74,756,000</b>	<b>\$57,780,000</b>	<b>\$60,000</b>	<b>7.5</b>
<b>#5 Solidification 0-10 feet, SVE, Cap</b>	<b>\$41,918,000</b>	<b>\$31,992,000</b>	<b>\$60,000</b>	<b>9.6</b>
<b>#6 Solidification 0-14 feet, SVE, Cap</b>	<b>\$53,073,000</b>	<b>\$40,752,000</b>	<b>\$60,000</b>	<b>7.6</b>
<b>#7 Solidification 500 ppm lead SVE, Cap</b>	<b>\$55,861,000</b>	<b>\$42,942,000</b>	<b>\$60,000</b>	<b>7.8</b>
<b>#8 Off-site Treatment &amp; Disposal, 0-14 feet, SVE, Cap</b>	<b>\$63,659,000</b>	<b>\$49,066,000</b>	<b>\$60,000</b>	<b>6.5</b>



a remedy, including the availability of materials and services needed to carry out a particular option.

**8. State Acceptance**

Indicates whether, based on its review of the information, the state concurs with, opposes, or has no comment on the preferred alternative.

**9. Community Acceptance**

Indicates whether community concerns are addressed by the remedy, and whether or not the community has a preference for a remedy.

In order for an alternative to be eligible for selection, it must meet the first two criteria described above, called threshold criteria.

**IX. Summary Analysis of Alternatives Against the Nine Criteria**

An evaluation of the eight alternatives in relation to the nine decision making criteria is summarized below.

**1. Overall Protection of Human Health and the Environment**

All of the alternatives, with the exception of the "no action" alternative, meet this criterion by minimizing or eliminating the risks from direct contact with soils and by minimizing or eliminating the source of groundwater contamination.

**2. Compliance with ARARs**

All of the alternatives, with the exception of the "no action" alternative, meet this criterion. ARARs are not applied to the "no action" alternative since no activity is taking place.

Since the "no action" alternative is not protective of human health and the environment it will not be discussed further in the criteria analysis.

**3. Long-term Effectiveness and Permanence**

The alternatives involving treatment or removal of the upper layers of soil as well as treatment of the lower layers of soil, provide the highest degree of long-term effectiveness.

The selected alternative, Alternative #3, would leave waste in place in the upper layers. However, the waste will be isolated by the cap and slurry walls, thus eliminating direct contact with the waste material and minimizing leaching to groundwater. The selected alternative will undergo a review every 5 years to insure protection of human health and the environment as required by EPA when waste is left in place.

#### **4. Reduction of Toxicity, Mobility and Volume through Treatment**

All alternatives with the exception of Alternative #2, RCRA cap, would remove approximately 24,387 pounds of VOCs from soil below 14 feet through the action of the SVE system.

Alternative #3 assumes that 25% or 17,950 pounds of VOCs in the upper layers would move into the lower layers and be treated. The mobility of contaminants in all soil layers would be reduced by the cap and slurry walls.

The solidification alternatives, #5-#7, would reduce the toxicity, mobility and volume of both volatile organic and inorganic contaminants by heating the excavated waste to remove VOCs and then stabilizing the soil to encapsulate the inorganics, including lead.

Approximately 99.99% of the VOCs in the upper layers of soil would be destroyed through incineration, alternative #4. The incineration ash would be stabilized, thereby encapsulating the lead.

#### **5. Cost**

See Table 5. The total project cost is the present value of capital costs plus operation and maintenance costs.

#### **6. Short-term Effectiveness**

Alternative #2 would have the least short-term impacts on site workers and nearby residents and workers because there would be no excavation of the waste. All of the alternatives that have excavation components (Alternatives #3-7) would have short-term impacts on the community and workers due to air emissions generated during excavation. Air emissions would be controlled.

See Table 5 for estimated clean-up times.

#### **7. Implementability**

All of the alternatives employ treatment technologies that have been proven effective in the field. Additionally, treatability studies performed on site waste showed that incineration and stabilization were effective in treating the contaminated soil.

#### **8. State Acceptance**

The State Department of Toxic Substances Control supports the preferred alternative, Alternative #3.

#### **9. Community Acceptance**

No community members attended the June 22, 1992 public hearing on the Revised Proposed Plan for Soil or submitted written comments during the comment period. Potentially Responsible Parties submitted written comments which questioned the need for the SVE

system.

Table 6 provides a comparative analysis of the eight alternatives in relation to the nine criteria.

#### **X. The Selected Remedy**

Based upon consideration of the requirements of CERCLA, the detailed analysis of the alternatives using the nine criteria, and the lack of adverse public comments, both EPA and the State have determined that Alternative #3 (Soil Vapor Extraction and RCRA Equivalent Cap with Slurry Walls) is the most appropriate remedy for the Purity Oil Sales Site.

The first step in implementing this alternative, will be to construct a slurry wall along the site boundaries to minimize the migration of contaminants. The wall will be constructed by excavating a trench approximately 25 feet deep and 2 to 4 feet wide around the perimeter of the site. The trench will be filled with a slurry of soil mixed with bentonite clay. Rubble uncovered during excavation of the trench will depending on the level of contamination be transported off-site to an appropriate RCRA facility or disposed on-site. Foam will be applied as necessary to control emissions during construction of the slurry wall.

Following construction of the slurry wall, the site will be graded and all contaminated canal sediments will be excavated and spread over the site. It is estimated that approximately 500 cubic yards of sediment will require excavation. The western 2/3 of the site is 3 to 5 feet above the surrounding land due to the rubble used to fill the former waste pits. Approximately 8,600 cubic yards of imported soil will be used as fill material for the eastern 1/3 of the site. Foam will be applied during excavation and spreading of the canal sediment to control emissions. The entire length of the canal along the southern boundary of the site will then be enclosed in a reinforced concrete pipe.

The 6.8 acre site will then be covered with a cap capable of satisfying the requirements under RCRA Subtitle C for closure of a hazardous waste landfill. The cap should consist of a 1 foot foundation layer containing a gas collection system, 2 feet of bentonite/clay mix, a high density polyethylene (HDPE) liner, 1 1/2 feet of sand containing a drainage collection system, followed by 2 feet of top soil.

The gas collection system will deliver gases to a treatment system. The system will include a scrubber to remove sulfur dioxide (SO<sub>2</sub>) and a carbon adsorber to remove VOCs.

For SO<sub>2</sub> removal, the treatment system will be designed for one scrubber to achieve a 95 percent SO<sub>2</sub> removal efficiency. Scrubber blowdown, generated at an estimated rate of 16 gallons per day, will be shipped off-site for disposal.

TABLE 6

## NINE CRITERIA LEVEL OF CONFIDENCE ANALYSIS

	ALT. 1	ALT. 2	ALT. 3	ALT. 4	ALT. 5	ALT. 6	ALT. 7	ALT. 8
PPHE	LOW	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH	HIGH
ARARs	N/A	HIGH	HIGH	MEDIUM	MEDIUM	MEDIUM	MEDIUM	HIGH
LTE&P	N/A	LOW	MEDIUM	HIGH	LOW	HIGH	HIGH	HIGH
STE	N/A	HIGH	HIGH	LOW	MEDIUM	MEDIUM	MEDIUM	MEDIUM
COST	N/A	\$25	\$36	\$75	\$42	\$53	\$56	\$64
IMP.	N/A	HIGH	HIGH	MEDIUM	MEDIUM	MEDIUM	MEDIUM	HIGH
RTMVT	N/A	LOW	MEDIUM	HIGH	LOW	HIGH	HIGH	HIGH
SA	N/A	LOW	HIGH	LOW	LOW	LOW	LOW	MEDIUM
CA	N/A	LOW	HIGH	LOW	MEDIUM	MEDIUM	MEDIUM	HIGH

PPHE - PROTECTION OF HUMAN HEALTH AND THE ENVIRONMENT

ARARs- COMPLIANCE WITH APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS  
INCLUDING APPLICATION OF WAIVERS

LTE&P- LONG TERM EFFECTIVENESS AND PERMANENCE

STE - SHORT TERM EFFECTIVENESS

COST - TOTAL 30-YEAR PRESENT WORTH COST IN 1995 DOLLARS- IN MILLIONS

IMP. - IMPLEMENTABILITY

RTMVT- REDUCTION IN TOXICITY MOBILITY VOLUME THROUGH TREATMENT

SA - STATE ACCEPTANCE

CA - COMMUNITY ACCEPTANCE

ALT. 1- NO ACTION  
ALT. 2- RCRA EQUIVALENT CAP  
ALT. 3- RCRA EQUIVALENT CAP, SLURRY WALLS, RETAINING WALLS, SVE  
ALT. 4- EXCAVATION, ON-SITE INCINERATION (0-14 FEET), SVE, CLAY CAP  
ALT. 5- EXCAVATION, ON-SITE SOLIDIFICATION (29,000 CUBIC YARDS), SVE, CLAY CAP  
ALT. 6- EXCAVATION, ON-SITE SOLIDIFICATION (55,000 CUBIC YARDS), SVE, CLAY CAP  
ALT. 7- EXCAVATION, ON-SITE SOLIDIFICATION (69,680 CUBIC YARDS), SVE, CLAY CAP  
ALT. 8- EXCAVATION, OFF-SITE SOLIDIFICATION (55,000 CUBIC YARDS), SVE, CLAY CAP

HIGH- HIGH LEVEL OF CONFIDENCE THAT CRITERION WILL BE ACHIEVED  
MEDIUM- MODERATE LEVEL OF CONFIDENCE THAT CRITERION WILL BE ACHIEVED  
LOW- LOW LEVEL OF CONFIDENCE THAT CRITERION WILL BE ACHIEVED  
N/A- NOT APPLICABLE

For VOC removal, saturated gases from the scrubber will be heated by a natural gas fired duct burner to raise the gas temperature by approximately 20 degrees F to avoid condensation. One adsorber will be designed to achieve a 95 percent VOC removal efficiency. Another similar unit will be installed as a stand-by unit. It is assumed that 1 pound of activated carbon would adsorb 0.15 pounds of VOCs. The spent activated carbon will be disposed of off-site at a permitted RCRA facility.

A retaining wall will be constructed around the cap to provide slope stability. The wall will be designed to withstand the lateral movement from a maximum credible earthquake. It is anticipated that the top of the wall will be 5 feet above grade. The wall is anticipated to be approximately 2 feet thick and the foundation is anticipated to be approximately 3 feet deep.

Finally, SVE wells will be installed through the cap and screened in Layers C, D, And E. The radius of influence of the SVE system will cover the entire length and width of the site with the possible exception of the 2.5 acre "front yard" area and the .5 acre area south of the North Central Canal. Additional sampling and analysis will be performed in these areas during design to determine the nature and extent of contamination. If it is determined by EPA that the level of contamination in these areas poses a risk to human health and the environment, the design of the SVE system will insure that the radius of influence extends to these areas.

Based on a radius of influence of 30 feet, an air flow rate of 40 cfm and a VOC extraction rate of 0.5 lbs per day per well, EPA estimates that 58 wells will be required to cover the site. All SVE wells will be screened as appropriate to provide coverage from 14 feet down to the water table. The wells will be designed to be used interchangeably as extraction or air injection wells.

A significant amount of the VOCs in soil deeper than 14 feet (approximately 24,387 pounds) will be removed by the action of the SVE system. Approximately 25% of 17,950 pounds of VOCs in soil from 0-14 feet are expected to be drawn into the lower layers of soil and be treated by the action of the SVE system. Tables 7 and 8 show the type and average concentration of the major VOCs in Layers A through E.

It is anticipated that four carbon adsorption systems, three active and one backup, will be needed to adsorb VOCs extracted from the soil. The amount of VOCs released to the atmosphere after treatment in the carbon adsorber will meet state and federal air quality standards.

Based upon the assumption that 25% of the VOCs in the upper layers will move downward, an operation period of approximately 80 months is anticipated for the SVE system. This assumes a system availability of 80 per cent due to maintenance. The actual operation time will be determined during design based on additional

**TABLE 7**  
**VOC CONCENTRATION IN SOIL LAYERS A & B**

Contaminated Soil Layer	Type and Average Concentration of the Major Volatile Compounds <sup>(1)</sup>
<b>Layer A, average concentration of VOCs in soil</b>	<b>18,722 µg/kg (19 ppm)</b>
(Samples at depths of 1½ feet-5 feet)	<div> <div>Benzene</div> <div>1.8%</div> </div> <div> <div>Ethylbenzene</div> <div>6.6%</div> </div> <div> <div>Chlorobenzene</div> <div>5.1%</div> </div> <div> <div>Toluene</div> <div>28.8%</div> </div> <div> <div>Trichloroethylene</div> <div>10.9%</div> </div> <div> <div>Tetrachloroethylene</div> <div>6.5%</div> </div> <div> <div>Xylene</div> <div>31.6%</div> </div> <div> <div>2-Butanone</div> <div>8.4%</div> </div>
Total Soil in Layer A = 29,000 yd <sup>3</sup>	
<b>Total VOCs Present in Layer A</b>	<b>1,456 lb</b>
<b>Layer B, average concentration of VOCs in soil</b>	<b>1,009,226 µg/kg (1,009 ppm)</b>
(Samples at depths of 5 feet - 12 feet)	<div> <div>Benzene</div> <div>1.8%</div> </div> <div> <div>Ethylbenzene</div> <div>15.1%</div> </div> <div> <div>Chlorobenzene</div> <div>2.0%</div> </div> <div> <div>Toluene</div> <div>29.1%</div> </div> <div> <div>Trichloroethylene</div> <div>8.9%</div> </div> <div> <div>Tetrachloroethylene</div> <div>6.3%</div> </div> <div> <div>Xylene</div> <div>26.1%</div> </div> <div> <div>4-Methyl-2 Pentanone</div> <div>2.5%</div> </div>
Total Soil in Layer B = 26,000 yd <sup>3</sup>	
<b>Total VOCs Present in Layer B</b>	<b>70,345 lb</b>

(1) The major compounds in Layer A are 97% of the total volatile organics in Layer A and the major compounds in Layer B are 88% of the total volatile organics present in Layer B.

TABLE 8 VOC CONCENTRATION IN SOIL LAYERS C, D, & E	
Contaminated Soil Layer	Type and Average Concentration of the Major Volatile Compounds <sup>(1)</sup>
Layer C, average concentration of VOCs in soil	134,134 µg/kg (134 ppm)
(Samples at depths of 12 feet-20 feet)	Benzene 1.6% Ethylbenzene 12.3% Chlorobenzene 7.0% Toluene 26.2% Trichloroethylene 6.8% Xylene 22.0% 2-Butanone 23.9%
Layer D & E, average concentration of VOCs in soil	42,512 µg/kg (43 ppm)
(Samples at depths of 20 feet - 39 feet)	Toluene 7.6% Trichloroethylene 35.9% Methylene Chloride 26.2% 4-Methyl-2 Pentanone 4.7% 2-Butanone 6.0%

(1) The major compounds in Layer C are 94% of the total volatile organics in Layer C and the major compounds in Layers D and E are 80% of the total volatile organics present in Layers D and E.

TOTAL VOCs IN LAYERS C, D AND E		
Layer	Amount of Contaminated Soil (yd <sup>3</sup> )	Amount of Volatile Compounds (lb)
Layer C	45,000	16,181
Layers D and E	72,000	8,206



testing.

Once the cap and SVE system are constructed, monitoring wells will be installed in accordance with RCRA in the vadose zone and groundwater to determine if hazardous constituents are migrating from the site.

In order to protect the cap, deed restrictions will be imposed on the site to prohibit future excavation. The site may be suitable for light industrial uses once cleanup levels have been achieved.

#### Applicable or Relevant and Appropriate Requirements (ARARs)

ARARs are federal and state standards, requirements or levels of control that Superfund remedies must meet. The ARARs identified for the selected alternative are listed in Appendix 1.

#### Cleanup Levels

The purpose of this response action is to control risks posed by direct contact with soils and canal sediments and to minimize the migration of contaminants to groundwater.

The purpose of the SVE system will be to reduce VOC mass in the vadose zone from 14 feet to the water table to a level that no longer threatens to contaminate groundwater at levels above MCLs. The threat to groundwater will be evaluated through vadose zone monitoring and vadose zone contaminant transport modeling. The Vadose Zone Transport Model (VLEACH) or a similar analytical tool determined acceptable by EPA, will be used to determine contaminant transport through the vadose zone. Vadose zone monitoring and modeling data will be used by EPA to determine the need for additional SVE or monitoring wells and to determine when to stop operating the SVE system. Modeling information will be supplemented by soil boring data taken between selected SVE wells and above and below the screened intervals for each layer.

A request to evaluate the need to continue operation of the SVE system will not be considered by EPA until the SVE system has operated for a minimum of one year. This will allow the SVE system to draw down and treat the most mobile VOCs in Layers A and B.

The groundwater monitoring system installed in compliance with RCRA Subtitle C requirements and the SVE system will be maintained in perpetuity. If it is determined that MCLs are being exceeded after the SVE system has ceased operating, the SVE system and/or the groundwater extraction wells will be re-activated under the direction of EPA.

#### XI. Statutory Determinations

Under CERCLA section 121, EPA must select remedies that are protective of human health and the environment, comply with applicable or relevant and appropriate requirements (unless a

statutory waiver is justified), are cost-effective, and utilize permanent solutions and alternative treatment technologies or resource recovery technologies to the maximum extent practicable. In addition, CERCLA includes a preference for remedies that employ treatment that permanently and significantly reduce the volume, toxicity, or mobility of hazardous wastes as their principal element. The following sections discuss how the selected remedy meets these statutory requirements.

#### Protection of Human Health and the Environment

The selected remedy protects human health and the environment through treatment of VOCs in soil deeper than 14 feet, thereby eliminating them as a source of groundwater contamination. Also, approximately 25% of the VOCs in the upper 14 feet of soil will be drawn down to the lower layers by the action of the SVE system and be treated.

The RCRA equivalent cap minimizes the risks from direct contact with soils. The cap and slurry wall significantly reduce the potential for rainwater to leach contaminants from the soil into the groundwater.

There are no short-term threats associated with the selected remedy that cannot be readily controlled. In addition, no adverse cross-media impacts are expected from the remedy.

#### Compliance with Applicable or Relevant and Appropriate Requirements

The selected remedy will comply with all ARARs. The ARARs are presented in Appendix 1.

#### Cost-Effectiveness

EPA believes this remedy will eliminate the risks to human health at an estimated cost of \$36,254,000, therefore the selected remedy provides an overall effectiveness proportionate to its costs, such that it represents a reasonable value for the money that will be spent.

The selected remedy assures a high degree of certainty that the remedy will be effective in the long-term because of the significant reduction of the toxicity and mobility of the wastes achieved through SVE and cap with slurry walls respectively.

#### Utilization of Permanent Solutions and Alternative Treatment Technologies (or Resource Recovery Technologies) to the Maximum Extent Practicable

EPA and the State of California have determined that the selected remedy represents the maximum extent to which permanent solutions and treatment technologies can be utilized in a cost-effective manner for the soils operable unit at the Purity Oil Sales site. Of those alternatives that are protective of human health and the

environment and comply with ARARs, EPA and the State have determined that this selected remedy provides the best balance in terms of long-term effectiveness and permanence, reduction in toxicity, mobility, or volume achieved through treatment, short-term effectiveness, implementability, cost, while also considering the statutory preference for treatment as a principal element and considering state and community acceptance.

The selected remedy significantly reduces VOC levels, one of the principal threats posed by the soil. This remedy will cost less than treatment of all soil layers or off-site disposal. The selection of a remedy which treats the contaminated soil is consistent with program expectations that indicate that highly toxic and mobile wastes are a priority for treatment and is often necessary to ensure the long-term effectiveness of a remedy.

Lead, the other principal threat at the site, will not be treated. However, the cap and slurry wall will prevent direct contact with contaminated soil, thereby eliminating the exposure pathway for lead.

#### Preference for Treatment as a Principal Element

By treating the contaminated soils by SVE, the selected remedy addresses one of the principal threats posed by the site through the use of this treatment technology. By utilizing treatment as a significant portion of the remedy, the statutory preference for remedies that employ treatment as a principal element is satisfied.

#### XII. Documentation of Significant Changes

The Proposed Plan for the Purity Oil Sales site was released for public comment in June 1992. The Proposed Plan identified Alternative #3, treatment of soil from 14-40 feet with Soil Vapor Extraction, RCRA equivalent cap, slurry wall and enclosing the North Central Canal, as the preferred alternative for soil remediation. EPA reviewed all written and verbal comments submitted during the public comment period. Upon review of these comments, it was determined that areas beyond the planned RCRA cap which are contaminated due to past site activities will be investigated further during design.

Contamination exists in surface and deep soil off-site. If further sampling and analysis during design indicates that these areas pose a threat to human health and the environment they will be remediated consistent with the design of the selected alternative. It is anticipated that off-site surface soil contamination will be excavated and brought on-site to be covered by the cap and that off-site deep soil contamination will either be excavated and brought on-site or remediated in place using SVE.

**APPENDIX A**

**APPLICABLE OR RELEVANT AND APPROPRIATE REQUIREMENTS**

Citation	Requirement Description	A	RA
I. Resource Conservation and Recovery Act (RCRA) as amended by Hazardous and Solid Waste Amendments (HSWA) (42 USC 6901 et seq.)  Hazardous Waste Control Act (HWCA) (Health and Safety Code Section 25100-25395)   <			

A = Applicable  
RA = Relevant and Appropriate

FEDERAL ARARS				
	Citation	Requirement Description	A	RA
LOCATION SPECIFIC	I. RCRA Location Standards (22 CCR 66264.18)	Portions of new facilities where treatment, storage, or disposal of hazardous waste will be conducted must not be located within 61 meters (200 feet) of a fault which has had displacement in Holocene time. Facilities located in a 100-year floodplain must be designed, constructed, operated and maintained to prevent washout of hazardous waste by a 100-year flood.  Because the intent of these location standards is to reduce the potential for release of hazardous constituents due to special environment conditions, they are relevant and appropriate for the proposed closure activities.		X
	I. Resource Conservation and Recovery Act (RCRA) (42 USC 6901 et Seq.)  Hazardous Waste Control Act (HWCA) (Health and Safety Code 25100-25395)  A. Permitted Hazardous Waste Facilities (22 CCR 66264.10)  1. Groundwater Protection (22 CCR 66264.90)	RCRA Subtitle C requirements provide action-specific ARARs for CERCLA actions if the CERCLA hazardous substance is also a RCRA hazardous waste, and the CERCLA action constitutes waste treatment, storage, or disposal as defined by RCRA. RCRA storage requirements are applicable to waste storage after the effective date of November 19, 1980. RCRA treatment requirements are applicable to any method, technique, or process, including neutralization, to change the character or composition of a hazardous waste to render it less hazardous. RCRA disposal includes placement of hazardous waste into a landfill, surface impoundment, or other management unit. Movement of a RCRA hazardous waste originally disposed before November 19, 1980 may invoke the land disposal restrictions. Requirements for RCRA-permitted facilities are generally applicable to CERCLA activities that consist of treatment, storage, or disposal (TSD) of hazardous waste.  Requirements for RCRA TSD facilities are not applicable because the proposed closure activities do not include treatment, storage, or disposal of RCRA hazardous waste. However, the requirements are generally considered relevant and appropriate because the remedy's closure of the unit is similar to a RCRA landfill or surface impoundment.  There are three types of groundwater monitoring for TSD facilities required under RCRA: detection monitoring, compliance monitoring and corrective action monitoring. The groundwater monitoring program must be designed and operated to verify that hazardous constituents have not		X
ACTION SPECIFIC				

A = Applicable  
RA = Relevant and Appropriate

Citation	Requirement Description	A	RA
1. (Continued)	<p>migrated beyond the outer containment layer prior to the end of post-closure care. The regulations are applicable to "regulated units" which are surface impoundments, waste piles, landfills, and land treatment units that received hazardous wastes after July 26, 1982.</p> <p>The RCRA-equivalent closure would not meet the definition of regulated unit. However, the closure includes leaving untreated waste in the ground. Therefore, groundwater monitoring requirements are relevant and appropriate for assuring effective protection.</p>		
2. Land Treatment Unsaturated Zone Monitoring (22 CCR 66264.90)	Because all wastes are not removed from the disposal area, vadose zone (unsaturated zone) monitoring requirements that require monitoring of soil and soil-pore liquids as feasible to determine whether hazardous constituents are migrating, are relevant. This requirement should be considered appropriate only to the extent that the remedial design can feasibly incorporate vadose zone monitoring.		X
3. Closure and Post-Closure (22 CCR 66264.110-66264.120)	RCRA closure of a "regulated unit" requires minimization of the need for further maintenance or control; minimization or elimination of postclosure escape of hazardous waste, hazardous constituents, leachate, contaminated runoff, or hazardous waste decomposition products; and disposal or decontamination of equipment, structures, and soils. Because this alternative leaves hazardous constituents in place, closure and post-closure requirements are relevant and appropriate. The landfill at the Purity Oil site should be closed pursuant to these regulations.		X
4. Landfill Closure and Post-Closure Care (22 CCR 66264.310)	Closure of a landfill requires a final cover designed and constructed to: prevent the downward entry of water into the landfill for a period of at least 100 years; function with minimum maintenance; promote drainage and minimize erosion of the cover; accommodate settling and subsidence so that the cover's integrity is maintained; and have a permeability less than or equal to the permeability of natural subsoils present. After final closure, all post-closure requirements contained in 22 CCR 66264.117 through 66264.120, including maintenance and monitoring, must be complied with throughout the post-closure care period. In addition, a control system designed to collect gases emitted from the buried waste and convey these gases to a treatment device is required unless it is demonstrated that significant amounts of toxic or flammable gasses will not be emitted from the buried waste.		X

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RA = Relevant and Appropriate

FEDERAL ARARS			
Citation	Requirement Description	A	RA
5. Land Disposal Restrictions for Hazardous Debris (22 CCR 66268, General)  (57 FR 160, Hazardous Debris Rule)	Land disposal restrictions are applicable to RCRA wastes that are excavated and placed either offsite or onsite. Debris is defined as materials that are primarily non-geologic in origin such as man-made synthetic manufactured materials, or construction and demolition materials. On August 18, 1992, EPA promulgated treatment standards to be attained prior to land disposal of debris which is a restricted RCRA waste.	X	
II. Clean Water Act (CWA) (33 USC 1251-1376; 40 CFR 100-199)  A. National Pollutant Discharge Elimination System (NPDES) (40 CFR 122-125)	Both onsite and offsite discharges from CERCLA sites to surface waters are required to meet the substantive CWA NPDES requirements, including discharge limitations, monitoring requirements, and best management practices. Only offsite CERCLA discharges to surface waters must be NPDES-permitted. Stormwater runoff that is channeled to a receiving water body is included under this requirement.	X	
III. Clean Air Act (CAA) (42 USC 7401 et seq.)  National Emission Standards for Hazardous Air Pollutants (NESHAPs)  A. Fugitive Emissions Sources (40 CFR 61.240)	Standards are given in the regulation for equipment that either contains or contacts a liquid or gas that is at least 10% by weight volatile hazardous air pollutants (VHAP), defined as regulated substances including benzene and vinyl chloride. Regulated equipment includes pumps, compressor pressure relief devices, sampling connection systems, open-ended valves or lines, valves, flanges and other connectors, product accumulator vessels and control devices or systems. Although the treatment units at Purity Oil are not expected to process VHAP at concentrations in excess of 10% by weight, these standards are still considered relevant and appropriate because their intent is to regulate and minimize VHAP emissions.		X



Citation	Requirement Description	A	RA
B. Benzene Waste Operation Standards (40 CFR 61.344)	Owners or operators of chemical manufacturing plants, coke by-product recovery plants, petroleum refineries, or RCRA-permitted hazardous waste facilities that treat, store, or dispose of hazardous waste (TSDFs) from these three types of facilities must comply with benzene emission standards if they manage a total quantity of benzene in excess of 10 megagrams per year (11 tons/year). These standards include general treatment and operation requirements and specific requirements for surface impoundment (defined as waste management units containing liquids wastes or wastes with free liquids), tanks, containers, and oil-water separators. The surface impoundment operation standard requires that the unit be equipped with a cover that does not release detectable benzene emissions as indicated by an instrument reading less than 500 ppmv above background. Again, the treatment units at Purity Oil are not expected to manage in excess of 10 megagrams per year of benzene, but these standards are still relevant and appropriate.		X

A = Applicable

RA = Relevant and Appropriate

## STATE ARARS

CHEMICAL SPECIFIC

Citation	Requirement Description	A	RA																																							
I. Hazardous Waste Control Act (HWCA) (Health and Safety Code Section 25100-25395)	HWCA provides the state law for the management of hazardous waste including the state criteria for the identification of hazardous waste and standards for the design, operation, and closure of hazardous waste treatment, storage, and disposal facilities. While this program closely parallels the federal RCRA program it contains some components with requirements in excess or more stringent than RCRA.																																									
A. Criteria for Identifying Hazardous Waste (22 CCR 66261.1-66261.126)	<p>Hazardous waste may be identified according to any of the following criteria according to specified test procedures.</p> <p>Toxicity Criteria: Toxicity of hazardous waste is established by LD<sub>50</sub> or LC<sub>50</sub> criteria.</p> <p>Persistent and Bioaccumulative Toxic Substances: Total Threshold Limit Concentrations (TTLCs) and Soluble Threshold Limit Concentrations (STLCs) have been established to identify hazardous waste. Chemicals detected at Purity Oil that have STLC or TTLC values are the following:</p> <table><thead><tr><th>Chemical</th><th>STLC(mg/l)</th><th>TTLC(mg/kg)</th></tr></thead><tbody><tr><td>Arsenic</td><td>5</td><td>500</td></tr><tr><td>Barium</td><td>100</td><td>10,000 (excludes Ba SO<sub>4</sub>)</td></tr><tr><td>Cadmium</td><td>1.0</td><td>100</td></tr><tr><td>Chromium (total)</td><td>560</td><td>2,500</td></tr><tr><td>Copper</td><td>25</td><td>2,500</td></tr><tr><td>Lead</td><td>5</td><td>1,000</td></tr><tr><td>Mercury</td><td>0.2</td><td>20</td></tr><tr><td>Nickel</td><td>20</td><td>2,000</td></tr><tr><td>Silver</td><td>5</td><td>500</td></tr><tr><td>Trichloroethylene</td><td>209</td><td>2040</td></tr><tr><td>Vanadium</td><td>24</td><td>2,400</td></tr><tr><td>Zinc</td><td>250</td><td>5,000</td></tr></tbody></table> <p>Corrosivity Criteria: If, when a waste is mixed with an equivalent weight of water, a liquid is produced which corrodes steel according to EPA SW-846 Test Method 1110 SW-846, it is a hazardous waste.</p> <p>List of Special Wastes: These include baghouse and scrubber wastes such as from APCD's and drilling muds from oil and gas wells.</p>	Chemical	STLC(mg/l)	TTLC(mg/kg)	Arsenic	5	500	Barium	100	10,000 (excludes Ba SO <sub>4</sub> )	Cadmium	1.0	100	Chromium (total)	560	2,500	Copper	25	2,500	Lead	5	1,000	Mercury	0.2	20	Nickel	20	2,000	Silver	5	500	Trichloroethylene	209	2040	Vanadium	24	2,400	Zinc	250	5,000	X	
Chemical	STLC(mg/l)	TTLC(mg/kg)																																								
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Citation	Requirement Description	A	RA
<p>1. Porter-Cologne Water Quality Act (WC 13000-13806) (23 CCR 2510-2533)</p> <p>Class I Waste Management Units</p>	<p>New waste management units shall have a 61-meter (200-foot) setback from any known Holocene earthquake fault (23 CFR 2531). New and existing hazardous waste management units shall be immediately underlain by natural geologic materials with a permeability of not more than 10<sup>-7</sup> cm/sec and shall not be located where porous soil could impair the ability of natural geologic materials to act as a barrier to vertical fluid movement. New and existing Class I units (hazardous waste management units) shall also be located outside of floodplains subject to inundation by floods with a 100-yr return period (23 CFR 2531). Alternatives to these standards may be considered under certain conditions if the standard is not feasible and the alternative is consistent with the performance goal and affords equal protection against water quality impairment. (See 23 CCR 2510 for specific conditions under which alternatives may be considered). These standards are relevant and appropriate for the RCRA cap because their intent is to prevent the release of hazardous waste through unusual environmental events.</p>		X
<p>1. Hazardous Waste Control Act (HWCA) (Health and Safety Code Section 25100-25395)</p> <p>A. Environmental Monitoring for Interim Status and Permitted Facilities (22 CCR 66264.90)</p> <p>B. Landfill Closure and Post Closure (22 CCR 66268.310)</p>	<p>This article contains the requirements for the environmental monitoring of air, soil, and water for on-site facilities that treat, store, or dispose of hazardous waste. General requirements include a provision for groundwater monitoring. In addition, the requirements are relevant and appropriate for closure and post-closure monitoring assuming that the redispersed waste is nonhazardous.</p> <p>Closure of a landfill requires a final cover designed and constructed to: prevent the downward entry of water into the landfill for a period of at least 100 years; function with minimum maintenance; promote drainage and minimize erosion of the cover; accommodate settling and subsidence so that the cover's integrity is maintained; and have a permeability less than or equal to the permeability of natural subsoils present. After final closure, all post-closure requirements contained in 22 CCR 66264.117 through 66264.120, including maintenance and monitoring, must be complied with throughout the post-closure care period. In addition, a control system designed to collect gases emitted from the buried waste and convey these gases to a treatment device is required unless it is demonstrated that significant amounts of toxic or flammable gasses will not be emitted from the buried waste.</p>		X

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STATE ARARS			
Citation	Requirement Description	A	RA
C. Closure and Post-Closure for Interim Status and Permitted Facilities (22 CCR 66264.110-66264.120)	<p>A hazardous waste management unit facility shall be closed in a manner that minimizes the need for further maintenance and controls, minimizes, or eliminates postclosure escape of hazardous waste, leachate, contaminated rainfall, or waste decomposition products to the ground or surface waters, or the atmosphere. Closure shall be completed within 90 days after receiving the final volume of hazardous waste. When closure is completed, all facility equipment and structures shall be properly disposed of, or decontaminated by removing all hazardous waste and residues. Post-closure care, including environmental monitoring, shall continue as long as the waste presents a potential threat to the environment.</p> <p>Closure and post-closure care requirements are relevant and appropriate because it proposes to leave either untreated or treated waste at the site within engineered containment systems. It is relevant and appropriate for the monitoring and containments used for the untreated waste and the wastes treated in situ.</p>		X
II. Porter-Cologne Water Quality Act (WC 13000-13806; 23 CCR 1050-2836).	<p>The Porter Cologne Water Quality Act provides broad statutory authority to protect water quality by regulating waste disposal and requiring hazardous waste cleanup. Regulations for monitoring and corrective action are applicable to "persons responsible for discharges at waste management units which are closed, abandoned, or inactive on the effective date of the regulations," meaning that the SWRQC and the RWQCB have jurisdiction over waste disposal sites abandoned prior to the enactment of requirements (§ 2510.(g)). Porter-Cologne delegates standard-setting authority to the RWQCBs. The Central Valley RWQCB has not promulgated specific treatment performance standards.</p>		
A. Water Quality Monitoring for Classified Waste Management Units (23 CCR 2550)	<p>Monitoring is required to detect leaks from waste management units and a corrective action program is required if leaks are detected. A waste management unit is broadly defined as an area of land where hazardous, designated, or nonhazardous waste is discharged. Owners and operators of new or existing landfills and surface impoundments shall monitor groundwater, surface water and the unsaturated zone as feasible.</p> <p>This requirement is applicable and generally complements the federal RCRA and state HWCA monitoring requirements.</p>	X	

# STATE ARARS

ACTION SPECIFIC

Citation	Requirement Description	A	RA
B. Discharges of Waste to Land, Construction and Operation Requirements for Waste Management Units (23 CCR 2510-2601)	<p>Waste management unit standards include design, construction, operation, and closure requirements for surface impoundments. Although alternative designs may be allowed if they are equally protective of water quality, specific requirements for Class I, or hazardous waste management units include the following:-</p> <ul style="list-style-type: none"> <li>- New and existing waste management unit landfills must be operated to ensure that wastes will be a minimum of five feet above the highest anticipated elevation of groundwater.</li> <li>- Cutoff walls are required where there is a potential for lateral movement of fluid; the walls must be constructed a minimum of 5 feet into natural geologic material with a permeability of <math>10^{-7}</math> cm/s or less.</li> <li>- Clay liners shall be at least 2 feet thick, of 90% relative compaction and maximum permeability of <math>1 \times 10^{-6}</math> cm/sec.</li> <li>- New and existing units must be closed with a cover consisting of 2 feet of foundation material, 1 foot of compacted top soil (permeability equal to the bottom liner), and the final cover must be graded to prevent ponding or erosion.</li> <li>- Post-closure care including monitoring, leachate collection, and cover maintenance must continue for as long as wastes present a threat to water quality.</li> </ul> <p>These standards are applicable under the assumption that hazardous wastes would be left in place at the closed unit.</p>	X	
<p>III. San Joaquin Valley Unified Air Pollution Control District Rules and Regulations</p> <p>A. Rule 220.1 - New and Modified Stationary Source Review</p>	<p>The San Joaquin Valley Unified Air Pollution Control District has authority to implement the federal and state air quality management programs in Fresno through the State Implementation Plan. However, Fresno County Air Pollution Control District (FAPCD) "Rules and Regulations" remain in effect in Fresno County until the corresponding San Joaquin Valley Unified Air Pollution Control District Rules and Regulations are promulgated in the State Code of Regulations. The District is completing "Rules and Regulations" and has issued the following that may serve as ARARs for Purity Oil.</p> <p>All new stationary sources which emit affected pollutants (pollutants including VOCs, <math>\text{NO}_x</math>, <math>\text{SO}_x</math>, <math>\text{PM}_{10}</math>, lead, and reduced sulfur compounds, are subject to the following requirements:</p>	X	

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RA = Relevant and Appropriate

STATE ARARS			
Citation	Requirement Description	A	RA
A. (Continued)	<ul style="list-style-type: none"> <li>- Use of Best Available Control Technology (BACT) for emissions,</li> <li>- Emission offsets for nonattainment pollutants, and</li> <li>- Air quality modeling to show that NAAQS or CAAQS are not violated or an existing violation is not made worse.</li> </ul> <p>These requirements apply to proposed remedial activities including in situ vapor extraction and air pollution control device emissions.</p>	X	
IV. Fresno County Air Pollution Control District (FAPCD) Rules and Regulations			
A. Rule 401 - Visible Emissions	Air contaminants shall not be emitted for a period longer than three minutes if they are darker than Number 1 on the Ringlemann Chart.	X	
B. Rule 404 - Particulate Matter Concentrations	Emissions may not contain more than 0.23 grams/m <sup>3</sup> of particulate matter at standard conditions.	X	
C. Rule 405 - Particulate Matter Emission Rates	<p>Emission shall not exceed the values given by the following equations.</p> $E = 3.59 P^{0.62}$ $E = 17.31 P^{0.16}$ <p style="text-align: right;"> <math>P \leq 30 \text{ tons/hour}</math>  <math>P &gt; 30 \text{ tons/hour}</math> </p> <p>Where: E = emissions in pounds per hour P = process weight in tons per hour</p>	X	
D. Rule 406 - Sulfur Compounds	Sulfur compounds (measured as SO <sub>2</sub> ) shall not exceed 0.2 percent by volume of any discharge to atmosphere.	X	
E. Rule 408 - Fuel Burning Equipment	<p>Equipment that burns fuel for the primary purpose of producing heat must not exceed the following emission limits:</p> <ul style="list-style-type: none"> <li>- Sulfur Compounds: 200 pounds per hour (Calculated as SO<sub>2</sub>)</li> <li>- Nitrogen oxides: 140 pounds per hour (Calculated as NO<sub>2</sub>)</li> <li>- Combustion Contaminants: 10 pounds per hour.</li> </ul> <p>Theses limit would apply to any air pollution control devices or process that use combustive processes.</p>	X	

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# OTHER REQUIREMENTS

Document	Requirement Description
<p>These guidelines provide the standard for compliance with previously cited RCRA requirements.</p> <p>I. RCRA Technical Guidance Document "Final Covers on Hazardous Waste Landfills and Surface Impoundments."</p> <p>II. RCRA Groundwater Monitoring: "Technical Enforcement Guidance Document."</p>	<p>These guidelines specify a multilayer cover consisting of the following layers from top to bottom:</p> <ul style="list-style-type: none"> <li>• Vegetation/Soil: 60 cm (2 ft.)</li> <li>• Filter (Nominal Thickness)</li> <li>• Drainage: 30 cm (1 ft.)</li> <li>• Low Permeability Flexible Membrane Liner: 20 mil (minimum)</li> <li>• Low Permeability Soil: 60 cm (2 ft.)</li> </ul> <p>Optional layers and layer modifications include the addition of a gravel top surface for erosion control and the removal of the drainage layer in arid climates, the addition of biotic barriers to prevent damage by animals, and the addition of a gas vent layer to control gas emissions.</p> <p>This comprehensive guidance document provides procedures to be followed for groundwater monitoring at RCRA TSD facilities.</p>

**APPENDIX B**

**EPA CONTRACT NUMBER 68-W9-0059  
WORK ASSIGNMENT NUMBER 59-13-9921**

**RESPONSIVENESS SUMMARY  
TO PUBLIC COMMENT**

**REVISED PROPOSED PLAN FOR SOIL**

**PURITY OIL SALES SITE  
MALAGA, CALIFORNIA**

**September 1992**

**Submitted to:  
EPA Region IX**

**Submitted by:  
ICF Technology, Inc.**



## RESPONSIVENESS SUMMARY

### INTRODUCTION

This document provides EPA's responses to questions and comments received on the Revised Proposed Plan for Soil at the Purity Oil Sales Superfund Site. The Revised Proposed Plan was made available for public review and comment on June 8, 1992. A public hearing was held on June 22, 1992. A transcript of the public hearing is included as Attachment B. The public comment period was closed on August 10, 1992. EPA received the following six letters providing written comments on the plan:

- UNOCAL. "Steering Committee's Comments on the June 1992 Revised Proposed Plan for Soil Cleanup Purity Oil Sales Site Operable Unit No. 2." August 10, 1992.
- Department of Toxic Substances Control. "Purity Oil Sales Superfund Site, Comments on Proposed Plan for the Second Operable unit addressing Remediation of Contaminated Soils." August 10, 1992.
- Sinsheimer, Schiebelhut & Baggett (For the County of Fresno). "Purity Oil Sales Superfund Site." July 10, 1992.
- Sinsheimer, Schiebelhut & Baggett (For the County of Fresno). "Purity Oil Sales Superfund Site." August 10, 1992.
- Pacific Gas and Electric Company. "Purity Oil Sales Site, Proposed Operational Unit No. 2 (OU-2) Soil Clean-up Plan." August 10, 1992.
- International Technology Corporation. "Comments on Soil Remediation Alternatives for the Purity Oil Site." July 28, 1992.

Copies of these letters are attached to this document as Attachment A. The responses to comments in the letters have been organized into categories according to design components of the proposed plan. Each comment is marked with an alphanumeric code in the right-hand margin of the original letter. For example, a notation of "1A" indicates that the response to that comment will be found in the "A" response of Section 1 of this Responsiveness Summary (Slurry Wall Design and Construction).

### COMMENTS AND RESPONSES

#### 1. Slurry Wall Design and Construction

- (A) The conceptual design of the slurry wall has been prepared with an objective of minimizing the lateral migration of contaminants from Layers A and B. The exact depth and length of the wall will be determined by EPA during design.
- (B) Because the site soil is acidic in nature, it was assumed that a cement-bentonite wall may not be suitable. The type of cut-off wall will be determined during design based on an evaluation of the requirements and performance for the slurry wall.
- (C) The determination of whether to dispose of the material excavated during construction of the slurry wall on-site or off-site will be made during design based on the chemical and physical characteristics of the waste. Foam will be applied to the excavated material as necessary to control emissions.

- (D) Because waste will be left in place in Layers A and B, the SVE wells will be maintained in perpetuity. Therefore, it is not possible to install the slurry wall following the termination of the operation of the SVE wells.

## **2. Retaining Wall**

- (A) The waste at the site is a Resource Conservation and Recovery Act (RCRA) hazardous waste, based on exceedence of the Toxicity Characteristics Leaching Procedure (TCLP) standard for lead. Therefore, RCRA is an Applicable or Relevant and Appropriate Requirement (ARAR) and the site must be remediated and closed in accordance with RCRA. A hardened thin cap must meet the requirements under RCRA for hazardous waste landfill closure and operation and maintenance in order to be approved by EPA. If a hardened thin cap is approved by EPA during design, the need for a retaining wall to support the cap will be evaluated at that time.
- (B) A retaining wall is assumed to be necessary to support the entire perimeter of the cap. If EPA determines during design that a conventional slope will provide adequate support and erosion protection in certain locations, then a retaining wall will not be constructed in these locations.

## **3. RCRA Cap**

- (A) A RCRA equivalent cap is necessary for the 2.4-acre "front yard" area. Based on information contained in the Feasibility Study (FS) prepared by CH2M Hill<sup>(1)</sup>, the 2-foot-deep surface soils of this area are contaminated with organic compounds and a variety of metals. One soil sample showed a lead concentration of 5,680 ppm which exceeds the State Total Threshold Limit Concentration value for definition as a hazardous waste.

The FS<sup>(1)</sup> contains insufficient data to determine if surface soil is contaminated in the 0.5-acre southwest corner of the "back yard" area. Additional sampling and analysis will be required during design to determine if this area will be capped.

- (B) It may be possible to combine the gas treatment systems of the cap and the soil vapor extraction (SVE) system. This determination will be made during design.

## **4. Soil Vapor Extraction System**

- (A) A Soil Vapor Extraction (SVE) system is necessary to remove volatile organic compounds (VOCs) in the soil and to minimize the leaching of VOCs to groundwater. Presently, nine VOCs in groundwater are exceeding MCLs.
- (B) EPA recognizes that the SVE system design parameters, such as extraction well locations, well depth, extraction rates, and well spacing will be determined during the design stage. However, the radius of influence of the SVE system must cover the entire length and width of the site with the possible exception of the 2.5-acre "front yard" area and the 0.5-acre southwest corner of the site. The SVE system will treat soil from 14 feet to the water table.

Based on the proven performance of the air stripper and carbon adsorption technologies for removing VOCs, these systems were selected in the conceptual design. Any other relevant components that can enhance the effectiveness of the SVE system will be evaluated during design.

- (C) In order to determine whether the SVE system can be eliminated from the "back yard" area south of the canal and from the "front yard" area, additional deep soil data will be required to determine whether contamination in this area poses a threat to human health and the environment.

- (D) It is estimated that 25 percent of the VOCs in Layers A and B will be drawn down to the lower layers of soil by the action of the SVE system and be treated. The exact percentage of VOCs in the upper layers of soil which will be treated will not be known until system operation. The slurry wall is intended to surround the waste in Layers A and B and will not treat the waste.
- (E) EPA concurs that SVE is a patented technology.
- (F) EPA believes SVE is a viable technology for the site based on information in the Soil Solidification Feasibility and Cost Evaluation report pages 2-14 to 2-21.

5. Groundwater Monitoring Wells

- (A) A groundwater monitoring program is required under RCRA 40 CFR 264.90-264.99, when RCRA hazardous waste is left in place. If the OU-1 groundwater monitoring wells can meet RCRA closure requirements, they can also be used for OU-2 monitoring.

6. Vadose Zone Monitoring

- (A) Vadose zone monitoring (Land Treatment Unsaturated Zone Monitoring, 40 CFR 264.278), is considered a relevant and appropriate requirement, since untreated waste will be left in Layers A and B. It is recognized that the vadose zone well spacing and depths will be determined during design.

7. Compatibility of OU-1 and OU-2

- (A) A decision regarding the installation of on-site groundwater extraction wells prior to OU-2 cap construction will be made during the OU-2 predesign phase.
- (B) EPA believes that SVE wells can be installed in a manner that would minimize damage to the cap. The SVE wells will be maintained in perpetuity.
- (C) The operation of the OU-2 remedy would be designed to minimize the potential for further groundwater contamination in exceedence of MCLs, thereby reducing the amount of time that OU-1 treatment system will be required to operate.

8. Predesign Phase of OU-2

- (A) The remedial technical components of the selected remedy include an SVE system, a RCRA equivalent cap, and a slurry wall. Based on the Administrative Record, EPA believes this is the most appropriate remedy for the site.

9. Canal Enclosure

- (A) Based on information provided in the CH2M Hill FS<sup>(1)</sup> (pages 1-15) the canal slopes are contaminated. Soil samples obtained from the canal slopes showed lead concentrations ranging from 1,200 mg/kg to 13,200 mg/kg which exceeds the California TTLC. Metals were also detected in samples from the canal bottom sediments.
- (B) If it is determined during design that the southwestern corner of the site is contaminated, a decision will be made to either relocate the canal or to excavate the contaminated soil and place it under the cap north of the canal.

#### 10. SVE Operation and Maintenance Period

- (A) The SVE system operation and maintenance (O&M) period is defined as the time required to achieve the clean-up levels for VOCs. The SVE operation parameters, such as air extraction rates, VOC concentrations in the extracted air, and radius of influence will be determined during design.

#### 11. Operation and Maintenance Cost Estimate

- (A) The cost estimate of \$36,254,000 for Alternative No. 3 in the "Revised Proposed Plan for Soil Clean-up" includes 80 months of costs for operating the SVE system. As shown in Table 3-4 of the "Revised Soil Vapor Extraction and Cap Feasibility Study" report<sup>(2)</sup>, dated May 1992, the estimated costs of \$36,254,000 includes \$701,000 for labor to operate an SVE system for a period of 80 months.
- (B) EPA recognizes that the actual O&M time and cost for an SVE system can not be determined until design is completed. EPA expects that if the actual O&M time is significantly less than the estimated 80-month period, total O&M cost will be proportionally lower than the cost estimated in the FS<sup>(2)</sup>.
- (C) Licensing costs for patented SVE technology were not included in the evaluation of the conceptual design. The conceptual cost estimate is, however, within the -30 percent, +50 percent range of accuracy as required by the NCP.

#### 12. Basis for Estimating VOCs Mass

An average concentration of VOCs in each soil layer was determined by averaging the analytical results of the RI<sup>(3)</sup> and Final Supplemental Report - Soil and Canal Water Sampling<sup>(4)</sup> as indicated below.

- (A) **RI Report Average:** Figure 4-1 and Figures 5-4 through 5-22 were used to obtain the required data. The total VOCs for the samples obtained from Soil Layer A (0- to 5-foot depth) at the cross-sections No. 2, No. 7, No. 8, and No. 9 were averaged. Thus, the average value for Soil Layer A was estimated at 18,722 µg/kg.

The total VOCs for the samples obtained from Soil Layer B (5- to 12-foot depth) at the cross-sections No. 1, No. 2, No. 3, No. 4, No. 5, No. 6, No. 7, No. 8, and No. 10 were averaged. The average value for Soil Layer B was estimated at 41,452 µg/kg.

The total VOCs for the samples obtained from Soil Layer C (12- to 20-foot depth) at the cross-sections No. 4, No. 5, No. 6, No. 7, and No. 8 were averaged. The average value for Soil Layer C was estimated at 20,768 µg/kg.

The total VOCs for the samples obtained from Soil Layers D and E (20- to 30-foot depth) at the cross-sections No. 1, No. 2, No. 3, No. 4, No. 5, No. 6, No. 7, No. 8, No. 9, and No. 10 were averaged. The average value for Soil Layers D and E was estimated at 975 µg/kg.

- (B) **Supplemental Report Average.** The information provided in Figures 3-1, 3-5, 3-2, and 3-8 was used to obtain the required data. The VOCs concentrations in these figures were based on an analytical extraction procedure. For mass estimation purposes only the VOCs extract concentrations were converted into total concentrations per soil mass (µg/kg soil unit). The sample results are given for the three cross-sections namely SB-15, SB-16, and SB-17.

There was no sample obtained for Soil Layer A at any of the cross-sections.

For Soil Layer B, two sample results are given at the cross-section SB-15. At the cross-sections SB-16 and SB-17, no samples were obtained from Soil Layer B. The average concentration of total VOCs for Soil Layer B was estimated at 1,977,000  $\mu\text{g/kg}$ .

Soil analyses for Soil Layer C include 4 samples at cross-section SB-15, 2 samples at cross-section SB-16, and 3 samples at cross-section SB-17. Based on these sample analyses, the average concentration of total VOCs for Soil Layer C was estimated at 247,500  $\mu\text{g/kg}$ .

The average concentration of total VOCs for Soil Layers D and E was estimated at 42,512  $\mu\text{g/kg}$  based on two samples at cross-section SB-15.

- (C) **Estimate of VOCs Mass.** Based on average concentrations of VOCs and the volume and weight of the different soil layers, the total VOCs mass in each layer was estimated as follows:

Soil Layer	Soil Volume and Weight	Average VOC Concentration ( $\mu\text{g/kg}$ )	Total VOC Mass (lbs)
Layer A	29,000 $\text{yd}^3$ (38,860 tons)	18,722	1,456
Layer B	26,000 $\text{yd}^3$ (34,840 tons)	1,009,226	70,345
Layer C	45,000 $\text{yd}^3$ (60,300 tons)	134,134	16,181
Layers D and E	72,000 $\text{yd}^3$ (96,480 tons)	42,512	8,206

This estimation was made solely for the purpose of conceptual design.

### 13. Remediation Managerial Concerns

- (A) EPA has concluded that in its current condition, the site poses an unacceptable human health risk and that both groundwater and soil remediation are necessary. The Hazard Index for potential surface soil exposure indicates unacceptable health effects may result. Also, VOCs in the soil are leaching to groundwater and causing MCLs to be exceeded.
- (B) In keeping with the NCP program management principles for RI/FS (40 CFR 300-430), EPA prefers to address the soils and groundwater operable units at the Purity Oil site independently and will address the optimum design of the selected technologies during design. The NCP directs that "sites should generally be remediated in operable units when early actions are necessary or appropriate to achieve significant risk reduction quickly, when phased analysis and response is necessary or appropriate given the size or complexity of the site, or to expedite the completion of total site cleanup."
- (C) EPA is satisfied with the results of the RI which demonstrated a correlation between chemicals found in soil and those found in groundwater at the Purity Oil site.

### 14. Identification of the Preferred Alternative

EPA identified the preferred alternative after a detailed analysis of all of the alternatives against nine criteria standards in accordance with the NCP (40 CFR 300.430). As required by the NCP, all alternatives were evaluated for attainment of the first two, or threshold criteria: (1) Overall protection of human health and the environment, and (2) Compliance with ARARs. These two criteria must be met in order to be eligible for selection. All alternatives that met the threshold criteria were then evaluated according to the next five balancing criteria: (3) Long-term effectiveness and permanence, (4) Reduction of toxicity, mobility or volume through treatment, (5) Short-term effectiveness, (6) Implementability, and (7) Cost. No single criterion was the basis for selection of the preferred alternative.

**15. Identification of Additional Potentially Responsible Parties**

Thank you for this information. EPA is investigating whether current or former owners or operators of the 0.5 acre parcel APN 330-06-05 should be added to the list of Potentially Responsible Parties at the Purity Oil Superfund Site.

**16. Soil Cleanup Levels**

Soil cleanup levels will be designed to insure that VOCs remaining in soil will not cause contamination of groundwater in exceedence of MCLs.

**17. Extent of Remediation**

During design, additional sampling and analysis will be performed on off-site, site related contamination. If it is determined that these areas pose a risk to human health and the environment, they will be remediated consistent with the selected remedy.

**REFERENCES**

- (1) CH2M Hill. "Public Comments - Feasibility Study Reports" EPA WA 3-9L21.1. April 12, 1989.
- (2) ICF Technology. "Revised Soil Vapor Extraction and Cap Feasibility Study" EPA WA 59-13-9921. May 1992.
- (3) CH2M Hill. "Remedial Investigation Reports, Vol. 1" EPA WA 3-9L21.1. October 1988.
- (4) CH2M Hill. "Final Supplemental Report - Soil and Canal Water Sampling at Purity Oil Site" EPA WA 3-9L21.1. August 1990.

**Attachment A**  
**COPIES OF COMMENT LETTERS**

# UNOCAL 76

August 10, 1992

Ian A. Webster  
Manager, Superfund Technical Response

Ms. Janet Rosati  
U. S. Environmental Protection Agency  
Region IX  
75 Hawthorne Street  
San Francisco, California 94105

Steering Committee's Comments on the  
June 1992 Revised Proposed Plan for Soil Cleanup<sup>(1)</sup>  
Purity Oil Sales Site Operable Unit No. 2

Dear Ms. Rosati:

EPA's preferred Alternative No. 3 identified in the June 1992 Revised Plan for Soil Cleanup at the Purity Oil Sales Site is comprised of a RCRA equivalent cap, SVE system and slurry cut-off wall. The Purity Steering Committee has some concerns regarding the appropriate component configurations and the extent to which they may be required for all site locations.

For the sake of succinctness, our concerns are presented in Table 1, attached. Of particular concern are:

- We do not believe that EPA has established a sufficient rationale for requiring the installation of either a slurry wall or an SVE system, or both. The data which we have reviewed indicates that the levels of contamination are so low, and pose such minor risks, that an engineered cap is entirely adequate to contain the contaminants and prevent them from migrating into the ground water or laterally onto adjacent properties. 1A  
4A
- If the slurry wall or the SVE system are ultimately required, we believe that the design parameters of these elements, and the extent to which they are to be constructed, should be determined only after taking into account the specific site conditions and the future impact on those conditions on a cap. 1A  
4B
- The Record of Decision (ROD) must reflect the need to:
  - Perform predesign tasks required to determine the appropriate configurations and locations for the preferred alternative components. See Responses
  - Base the final design details on the evaluation of data collected in prior EPA studies and the predesign activities.

(1) Submitted on behalf of the Purity Oil Steering Committee (PSC). PSC members complying with AO NO 91-28 are Chevron Corporation, Unocal Corporation, Morrison-Knudsen Corporation, Brown and Root, Inc., and BHP Utah International (as a joint venture); Pacific Gas and Electric Company, Inc.; Cummins West, Inc., Foster Poultry Farms; California Department of Transportation; and Southern Pacific Transportation Company.

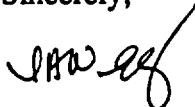


Table 2, attached, discusses several important, but not major, concerns that should also be addressed by EPA. Attachment I summarizes some of the types of predesign activities that may need to be accomplished. Attachment II provides some suggestions for the ROD, to insure that the document incorporates sufficient flexibility to permit the best design to occur.

We understand that EPA will be preparing a responsiveness summary to the OU-2 Proposed Plan. The Steering Committee asks that EPA address in its responsiveness summary each of our "bulletized" concerns in Tables 1 and 2.

If you have any questions regarding our comments, please do not hesitate to contact me at (213) 977-6382. Thank you for your cooperation.

Sincerely,



Ian A. Webster  
Representing the OU-1 Respondents

IW:dh  
Attachments

TABLE 1

**MAJOR TECHNICAL COMMENTS  
PURITY OIL SALES SITE (OU-2)**

COMPONENT	EPA ASSUMPTION	COMMENTS	
Slurry Wall	A 25-foot deep bentonite slurry wall would be constructed around the entire site boundary.	<ul style="list-style-type: none"> <li>The need for a slurry wall, its depth and location should be based on site conditions and requirements. Potential areas where a cut-off wall may not be required include: <ul style="list-style-type: none"> <li>Areas below the depth of buried waste (about 14 feet) where a proposed soil vapor extraction (SVE) would be operating;</li> <li>Around perimeter of "front yard;"</li> <li>Areas where other components may remediate a zone (e.g., if canal is directed through a pipe a large buffer zone would be created between unremediated site and accessible boundary);</li> <li>Where existing boundary may be sufficient to prevent lateral migration of site material.</li> </ul> </li> <li>Bentonite slurry, which will settle and could become dry and cracked with time may not be the appropriate material for the cut-off wall. The type of cut-off wall (e.g., bentonite slurry, cement bentonite, HDPE liner) should be determined based on predesign evaluations of requirements and anticipated performance.</li> </ul>	1A  1B
Retaining Wall	A 2,700-foot long, 8-foot high and 2-foot thick retaining wall would be installed to contain the perimeter of the cap.	<ul style="list-style-type: none"> <li>The potential need for a stabilizing wall may be significantly reduced if a hardened thin cap is installed as opposed to the thicker, multi-soil layer cap.</li> <li>There may be locations along the perimeter of the cap where a conventional slope would provide adequate stability and erosion protection (e.g., at the front yard area).</li> </ul>	2A 2B
RCRA Equivalent Cap	The entire 6.8-acre site would be covered with a 6.5-foot thick cap (1-foot foundation layer, 2 feet of bentonite/clay mix), HDPE liner, 1.5 feet of sand, and 2 feet of topsoil. A gas collection system would be included in the foundation layer.	<ul style="list-style-type: none"> <li>A thinner 2-foot hardened cap (HDPE liner, 1-foot reinforced concrete, and 1-foot vegetation layer) would reduce infiltration, control potential migration, and prevent access to site material with the potential to reduce the need for any retaining wall requirements.</li> <li>At least two areas onsite may not require a cap, including: (1) the 2.4-acre "front yard" where there are no buried wastes; and (2) the 0.5-acre southwest corner of the back yard (south of the canal) where there also are no historic waste disposal activities.</li> </ul>	2A 3A
SVE	58 wells to a depth of 40 feet, operating with a 30-foot radius of influence. The wells would operate as follows: 44 extraction and 14 injection at a given time.	<ul style="list-style-type: none"> <li>By EPA's calculations, if the Hazard Index for all constituents below 1-foot is below 1, why is a SVE system necessary, especially if a low permeability cap is installed?</li> <li>If an SVE system is deemed necessary, its location, depth, extraction rate, and well spacing should be based on studies during the predesign stage.</li> <li>An SVE system is not required in all areas, especially in the front yard and back yard areas south of the canal.</li> </ul>	4A 4B 4C
Ground Water Monitoring Wells	Approximately 18 additional wells will be added.	<ul style="list-style-type: none"> <li>The need for any additional wells in ground water would be more appropriately addressed in Operable Unit (OU-1). Current activities under OU-1 include developing an extraction and treatment system in the area of the site which presently has over 40 monitoring wells that are sampled on a quarterly basis.</li> </ul>	5A
Vadose Zone Monitoring Wells	27 wells along the perimeter of the slurry wall at 120-foot centers (except along trailer park where they will be at 60-foot centers).	<ul style="list-style-type: none"> <li>If an SVE system, cap and slurry wall are installed to prevent any existing site material from migrating while the site presently shows no indication of gas migration, it appears that the extent of this activity is not necessary or much greater than required.</li> <li>If required, vadose zone well spacing should be determined during predesign activities.</li> </ul>	6A
Compatibility of OU-1 and OU-2	Operable units are not related - separate projects/separate schedules.	<ul style="list-style-type: none"> <li>The operable units are technically and programatically linked. For example: <ul style="list-style-type: none"> <li>The ground water monitoring program of OU-1 can equally satisfy the ground water monitoring requirements of OU-2.</li> <li>The installation of onsite ground water extraction wells for OU-1 should occur after the OU-2 cap has been constructed.</li> </ul> </li> </ul>	5A 7A
Predesign Phase of OU-2	EPA's approach appears to be too prematurely quantifying component numbers and condition.	<ul style="list-style-type: none"> <li>The predesign phase is the appropriate project phase wherein to conduct actual onsite studies to determine the size, type and number of the remedial technical components. The proposed plan and the ROD should not be so technology-prescriptive that the most appropriate remedy cannot be implemented.</li> </ul>	8A

**TABLE 2**

**SUPPLEMENTAL COMMENTS  
PURITY OIL SALES SITE (OU-2)**

TOPIC	EPA ASSUMPTION	COMMENTS
Canal Pipe Enclosure	A detailed description of this activity was not included in EPA documentation	There is no indication that the site is causing contamination at the canal. FID has indicated a desire for a pipe section along the site boundary as part of its regular maintenance program.
SVE O&M Period	EPA has assumed a nine- to ten-year SVE system O&M period	It may be reasonable at this time to assume a 10 year O&M period for the SVE system operations. However, this is much longer than is typically required at the hundreds of sites where soil vapors are being remediated by this technique. The actual time for operating the SVE system should be determined by criteria established during predesign. This criteria should be evaluated upon the quality of gas which is reasonably expected to be recovered based on predesign pilot tests and calculations or modeling to evaluate the threat of vapors to ground water quality considering potential infiltration conditions after installation of the cap.
O&M Cost Estimate	Alternative No. 3	It appears that the \$36,254,000 cost estimate for Alternative No. 3 in the Revised Proposed Plan for Soil Cleanup includes 30 years of costs for operating the SVE system. This results in an over-estimate of O&M costs with respect to the maximum anticipated 10-year SVE system operational period. This suggests that the estimated cost for O&M period should be reduced to reflect the actual estimate of SVE system operation. This would result in a decrease in the cost estimate of about \$6,000,000.

92-150 (8/10/92/pm)

## **ATTACHMENT I EXAMPLE PREDESIGN ACTIVITIES**

- Evaluation of subsurface conditions at the project boundary and areas between the boundary and buried wastes to determine: (1) the required locations and design requirements for the bentonite slurry (or equivalent) cut-off wall; and (2) handling procedures for soils and rubble removed during cut-off wall construction.
- Evaluation of the extent of contamination, if any, in the portions of site with no buried wastes to determine the appropriate: (1) limits for the engineered cap and soil vapor extraction (SVE) system; and (2) location for the cut-off wall. These areas include the entire eastern "front yard" area and all of the area south of the north dike of the North Central Canal.
- Evaluation of the variability of soils (from existing boring data) in the area where SVE wells will be installed to determine the range of conditions for pilot testing during Predesign activities.
- Operation of SVE system pilot tests so that the zone of influence, spacing and number of wells can be determined.
- Soil sampling through layers A and E to determine a better estimate of the mass of Volatile Organic Compound (VOC) to be treated by the SVE. Determine locations, if any, and depths where site wastes may need to be contained by a cutoff wall.
- Compatibility of OU-1 and OU-2 activities.
- Evaluation of cap configuration alternatives, and especially the relative merits of a thin hardened cap in comparison with a thick multilayered soil cap.
- Evaluation of the locations, if any, where a special cap edge containment (e.g., crib wall) is required, considering cap thickness and material, and the available space for using conventional soil slopes.

## **ATTACHMENT II ROD FORMAT REQUIREMENTS**

- The ROD wording choice should preserve critical decisions about design details until predesign activities are completed.
- The "Site Characterization" section of the ROD should point out that:  
(1) certain of the site characteristics require further understanding to draw final conclusions regarding the remedy component configurations; and  
(2) that additional data developed during Predesign will be used for that purpose.
- The "Changes to the Proposed Plan" section of the ROD should indicate that the specific dimensions and materials identified for the remediation components may be altered as a result of predesign investigations, so long as the selected configurations satisfy the criteria used to evaluate the alternatives (Reference: Page 8 of U.S. EPA's June 1992 Revised Proposed Plan announcement).
- The "ARARs" section should include a waiver of the land ban requirements if they could potentially be applied to the excavation and replacement (after additives are included) of soil at the cut-off wall. Also, there is not an ARAR for vapor in the soils. Therefore, the ROD should not attempt to establish a performance standard for this factor. Instead, the SVE performance requirements should be determined during Predesign based on additional soil samples, SVE testing and assessment of the potential for contaminant migration subsequent to installation of the engineered cap.
- The "Selected Remedy" section of the ROD should also assure sufficient flexibility for incorporating results of the Predesign analysis into final component configuration selection.

## DEPARTMENT OF TOXIC SUBSTANCES CONTROL

51 CROYDON WAY, SUITE 3

SACRAMENTO, CA 95827-2106

(916) 855-7700



August 10, 1992

Mr. Dave Jones  
U.S. Environmental Protection Agency  
Region IX  
75 Hawthorne Street  
San Francisco, California 94105

PURITY OIL SALES SUPERFUND SITE, COMMENTS ON PROPOSED PLAN FOR  
THE SECOND OPERABLE UNIT ADDRESSING REMEDIATION OF CONTAMINATED  
SOILS

Dear Mr. Jones:

The State of California, Department of Toxic Substances Control (DTSC), hereby submits the following comments on the Proposed Plan for the soil cleanup at the Purity Oil Sales Superfund Site (site).

DTSC concurs with the conceptual aspects of the preferred alternative as presented in the June 1992 Proposed Plan Fact Sheet, Purity Oil Sales Superfund Site. Specifically, we believe that the construction of a soil vapor extraction system, capping the site, construction of a slurry wall around the site and the enclosure of the canal are necessary steps towards the goal of a final and permanent solution at the site.

Even though we concur with the Proposed Plan, we have several concerns which we hope to resolve by working with the U.S. Environmental Protection Agency (EPA) in the development of the Record of Decision (ROD) for the soils cleanup. These concerns are basically as follows:

1. Cleanup standards for the soils which are protective of the groundwater should be developed. EPA should use the data from pilot studies to demonstrate that those standards can be met by soil vapor extraction or a variation thereof and to establish baseline design parameters. 16
2. The soils cleanup, as described in the Proposed Plan and the Feasibility Studies, does not address the cleanup of several areas where the soils are known to be, or suspected of being, contaminated. The ROD for the soils cleanup should address all areas of known contamination and include additional investigations to determine whether cleanup is necessary in areas of suspected contamination. 17

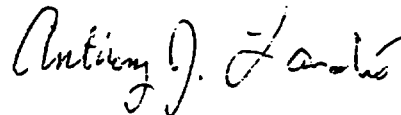
Mr. Dave Jones  
August 10, 1992  
Page Two

3. The emplacement of numerous wells through a permanent cap may unnecessarily compromise the integrity of the cap. This can easily be avoided by constructing a temporary cap until the soil vapor extraction wells have served their function and are removed. The permanent cap should be constructed after the completion of vadose zone remediation activities.

Please see the enclosed memorandum which gives the details with regard to the above items and our additional comments on the proposed slurry wall and the relocation of the canal.

Thank you for your continuing cooperation with DTSC towards achieving a remedy to the extensive contamination at the Purity Oil Sales Site and we look forward to working with you in the future.

Sincerely,



Anthony J. Landis, P.E.  
Chief, Site Mitigation Branch

Enclosure

cc: Ms. Janet Rosati  
U.S. Environmental Protection Agency  
Region IX  
75 Hawthorne Street  
San Francisco, California 94105

Mr. Scott Nevins  
Regional Water Quality Control Board  
3614 East Ashlan Avenue  
Fresno, California 93755

**M e m o r a n d u m**

To : Tony Landis, P.E.  
Chief, Site Mitigation Branch

Date: August 10, 1992

Via: Donn Diebert, P.E., Chief  
National Priority List Unit

From : Site Mitigation Branch  
10151 Croydon Way, Suite 3  
855-7861

Subject: Purity Oil Sales: Comments on Proposed Plan for Soils Record  
of Decision (ROD)

The following memorandum sets forth my concerns with regard to the Proposed Plan and the Feasibility Studies for the Soils Operable Unit at the Purity Oil Sales Superfund Site. A general layout of the facility is provided as Attachment 1 for your reference.

The primary areas of concern which will be discussed in this memorandum are outlined below:

1. Soil Vapor Extraction ("SVE") System:

- |  |          |
|--|----------|
| a. Standards have not been developed for determining when the remediation due to the operation of the SVE system is completed.   | 16       |
| b. There is a lack of data which is necessary to support a favorable judgment on the viability of SVE as an effective remediation technique at the Purity Site. Also, there is insufficient data to make a determination as to the number of SVE wells which will be required. | 4B<br>4F |
| c. The Proposed Plan prescribes carbon adsorption as the methodology to be used to treat the extracted vapors whereas the methodology should be based on performance standards.  | 4B       |
| d. Use of SVE may require a license as it is a patented technology.  | 4E       |
| e. Air sparging, dual vacuum extraction and steam injection are technologies which have been developed to enhance the effectiveness of SVE and should be evaluated.  | 4B       |





Mr. Dave Jones  
August 10, 1992  
Page Three

cc: Mr. Tim Casagrande  
Fresno County Dept. of Health Services  
1221 Fulton Mall (Brix-Mercer Building), 3rd Floor  
Fresno, California 93721

Mr. Martin Keast  
San Joaquin Valley Unified Air Pollution Control District  
P.O. Box 1312  
Fresno, California 93715

Mr. Ramon Perez  
Department of Toxic Substances Control  
P.O. Box 806  
Sacramento, California 95812-0806

2. Unaddressed Areas of Contamination:
  - a. Deep soil contamination behind Golden State Market should be remediated. Other off-site deep soils have not been adequately investigated. 17
  - b. Areas where surface soils are contaminated should be remediated. 17
  - c. The Feasibility Study shows that SVE is not contemplated for the area of the facility where the buildings and tanks were located (the "front yard"). Contaminated portions of this area should be addressed. 4C
3. RCRA Equivalent Cap Design:
  - a. Under the plan, the removal of SVE 58 wells will necessitate excessive repairs to the cap if the final cap is installed immediately. 7B
  - b. There is a lack of definition for the final and/or interim cap configuration. 2A
  - c. The plan calls for the unnecessary construction of separate collected gas treatment facility. 3B
4. Slurry Wall:
  - a. The slurry wall, if installed immediately, will inhibit remediation of off-site contamination. 17
  - b. The plan calls for the unnecessary off-site disposal of excavated material. 1C
  - c. Excessive air emissions may be generated during slurry wall excavations. 1C
5. The canal should be relocated to the edge of the facility. 9B

The above concerns are explained in detail below.

I. SOIL VAPOR EXTRACTION

A. Introduction

EPA's preferred alternative for soil cleanup includes

soil vapor extraction for soils at 14-40 feet. The portion of the proposed plan which describes the soil extraction system is reproduced below:

Soil Vapor Extraction (Figure 2) is a process in which organic contaminants are evaporated (volatilized) from the soil, using a series of on-site air injection wells and extraction wells. The extracted VOCs are then treated by carbon adsorption prior to discharge to the air. Carbon adsorption is a treatment system where the volatilized contaminants are forced through tanks containing activated carbon, a specially treated material that attracts the contaminants. The contaminants cling to the carbon, and the air leaving the system is able to meet air quality standards.

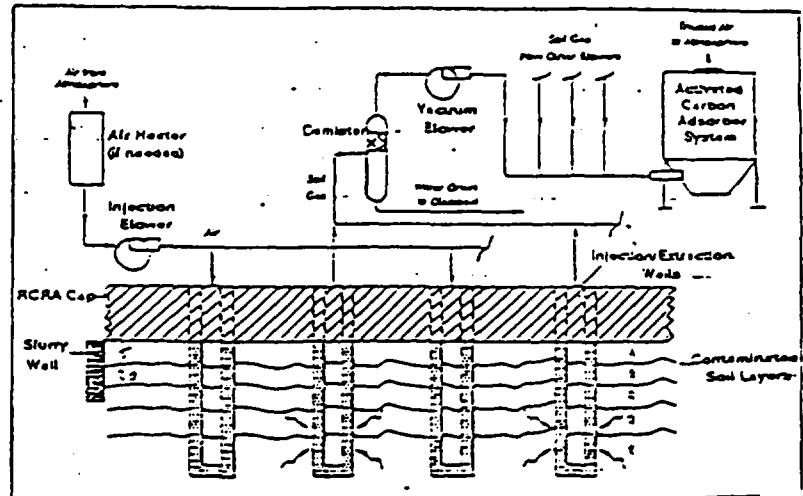


Figure 2: SOIL VAPOR EXTRACTION SYSTEM

#### B. Standards for Remediation

The May 1992 "Soil Solidification Feasibility and Cost Evaluation" includes a description of soil vapor extraction as it may apply to the Purity site. It estimates that layers C, D and E of the site contain 24,387 pounds of VOCs. Based on an estimated VOC extraction rate it is calculated that the system would be operating 46 months to remove VOCs from soil layers C, D, and E.

Additional analysis of the proposed operation period of the soil vapor extraction system is set forth in the May 1992 "Revised Soil Vapor Extraction and Cap Feasibility Study". An increase in operation time of the SVE system, beyond the 46 months estimated above, is calculated based upon the assumption that 25% of the VOCs from layers A and B will be collected in addition to the VOCs from layers C, D, and E. These calculations result in an estimated operation time of the SVE system for 80 months.

The calculations used to estimate the operational period for the SVE system are useful for cost comparison purposes and may give a general indication of the period of time that the SVE system will be in operation. However, the exact amount of VOCs beneath the site, the rate of their

extraction and the amount of VOCs from layers A and B which will be collected are unknowns. Hence, the methodology used to estimate the period of operation is not suitable for determining the point at which the operation of the SVE system should be discontinued and the SVE wells removed.

10A

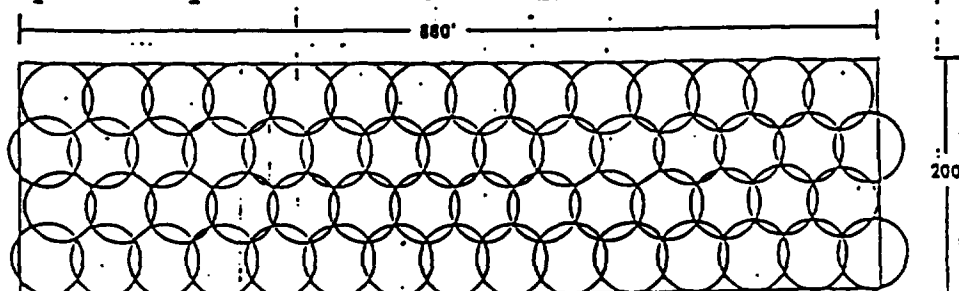
The 1989 ROD for the cleanup of ground water contamination (Operable Unit #1) states, "Additional cleanup goals based on groundwater protection and constituent solubility will be developed in consultation with the Regional Water Quality Control Board and included in the soils ROD". I have recently spoken with Les Obata with the Fresno Office of the Regional Water Quality Control Board (Mr. Obata has recently taken over the project from Mr. Jim Stites) and he is unaware of any consultations between the regional board and the U.S. Environmental Protection Agency (EPA) on this matter.

EPA should establish cleanup goals for the vadose zone which should be clearly set forth in the Record of Decision. Those cleanup goals should be based upon a demonstration, through soil borings and analysis of contaminant mobility, that remaining VOC levels in the soils pose no threat of degrading the groundwater quality. Under the National Contingency Plan, one of the nine evaluation criteria to be applied to the alternatives is "reduction of toxicity, mobility or volume through treatment" (40 CFR 300.430(e)(9)(iii)(D)). A factor to be considered under this criteria is "the type and quantity of residuals that will remain following treatment..." (40 CFR 300.430(e)(9)(iii)(D)(5)). Thus, the National Contingency Plan requires such an evaluation.

16

#### C. Number of Wells

The May 1992 "Soil Solidification Feasibility and Cost Evaluation" gives assumptions as to the radius of influence (30 feet), extraction flow rates (40 cfm) and VOC concentration in the extracted gas (60 ppm). The figure below, taken from the Feasibility study, depicts the conceptual layout of the SVE wells.



Tony Landis  
August 10, 1992  
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Approximately 11 miles northwest of the Purity site is the Vendo site where an SVE system was installed. The soils at the Purity site were classified as silt with sand (ML), silty sand (SM), and poorly graded sand (SP). The lithology is similar at the Vendo site consisting mostly of sands and silty sands.

The radius of influence achieved by the test wells installed in the shallow soils at the Vendo site was much greater than the assumption of 30 feet used by EPA for the Purity site. Of course, "radius of influence" is somewhat of a misnomer because the radius of influence is dependent on the amount of vacuum applied to the extraction well and the vacuum level at the observation well considered to be significant. However, at Vendo the effects of applying a vacuum of 10 inches water to an extraction well could be measured in observation wells over 100 feet away. A vacuum of 40 inches water was observable from over 200 feet distant.

Assuming that a radius of influence of 100 feet is obtainable, then the number of extraction wells required is reduced to only 12 to 15 and, under this scenario, off-site contamination would fall under the influence of the system.

The point of the above comparison is to demonstrate that the number of SVE wells required for the site should not be set forth in Record of Decision because the assumptions set forth in the Feasibility Studies as to the SVE wells' radii of influence may be grossly in error. A pilot test is typically performed prior to designing an SVE system and, if the system is complicated, air flow models may be used in conjunction with the pilot test (Curtis, "Pollution Engineering", April 15, 1992 at page 57). Clearly, pilot studies will be required to determine the design parameters for the SVE system.

Ms. Janet Rosati, the EPA RPM for the soils remediation, informed me the EPA has undertaken some type of pilot studies (Meeting on 07/21/92). The results of those studies may provide a basis for determining the number of SVE wells which will be required at the site. We should be afforded an opportunity to review those results prior to the issuance of the ROD if EPA intends to include a definitive number of SVE wells in the ROD.

#### D. Extracted Vapor Treatment

In the same way that the radius of influence for the SVE wells is based upon assumptions that are unsubstantiated with regard to specific site parameters, the selection of the appropriate extracted vapor treatment methodology (given in the proposed plan as carbon adsorption) should be based upon pilot studies which demonstrate the required flow rate and contaminate levels.

The reason for conducting pilot studies in this case is that the removal rates of the VOCs at the site will be less than the removal rates which would be obtained if the constituents were in the form of "free product". The high levels of oil and grease detected in the samples analyzed by Harding and Lawson indicate that the VOCs may, to some extent, be contained in that oil and grease. Raoult's law states that the partial pressure of a volatile component above a liquid mixture is equal to its free product vapor pressure times its mole fraction, i.e., the vapor pressure is reduced (Soil Vapor Extraction Technology, Reference Handbook, February 1991, EPA/540/2-91/003 at page 22). Thus, lowered vapor pressures of the VOCs mixed in the oil and grease fractions may inhibit the effectiveness of the SVE system.

On the other hand, recovery rates may be very high during the early phase of SVE (Ibid at page 211). Carbon adsorption can become prohibitively expensive for high recovery rates (Roy, "Hazmatworld", October 1991 at page 38). If pilot studies and subsequent design parameters indicate that high recovery rates will be achieved, another vapor treatment technique may be warranted. Thermal destruction, catalytic oxidation and/or on-site carbon regeneration are proven technologies that can achieve the same level of vapor treatment with additional advantages over carbon adsorption and subsequent disposal of saturated carbon. EPA should set forth vapor treatment standards in the ROD which are in accordance with the Air District regulations rather than prescribe the use of a particular vapor treatment technology.

#### E. Possible Patent and Licensing Requirements

A recently article in "Hazmat World", October 1991, indicates that Jim Malot acquired the sole rights to the SVE technique in 1987 (article is included as Attachment "2").

The article indicates that the patents have survived challenges by several companies and that Malot intends to enforce the patents by legal means if necessary.

Before the EPA chooses SVE for remediation of soils at the Purity site, they should first contact the patent holder and receive assurances that he will make the technology available and at what cost. The licensing fee should be considered in EPA's choice of remedies if the fee is excessive.

#### F. Consideration of Related Technologies

The use of soil vapor extraction is a viable means for extracting the VOCs from the subsurface at the Purity site. However, there are several other related technologies which are available which may provide additional benefits towards removing the contaminants at Purity. EPA should consider the use of the related technologies listed below and the ROD should be flexible enough to allow the implementation of these technologies if warranted.

4P

1. Air Sparging; Seasonal water table fluctuations, drawdown associated with pump-and-treat remediation techniques or disposal involving dense, non-aqueous phase liquids can create contaminated soil below the water table. Vapor extraction alone is not considered to be an optimal remediation technology to address this type of contamination. An innovative approach to saturated zone remediation is the use of sparging (injection) wells to inject air into the saturated zone below the areas of contamination. The contaminants dissolved into the ground water and sorbed onto soil particles partition into the advective air phase and are transported to the vadose zone within the radius of influence of a vapor extraction and vapor treatment system (Marley, et. al., Ground Water Monitoring Review, Spring 1992 at page 137. See also Brown and Jasiulewicz, Pollution Engineering, July 1, 1992 at page 52).

2. Dual Vacuum Extraction and/or Groundwater Depression; Dual vacuum extraction operates in the same way as SVE except that the extraction wells are placed below the water table. The wells feature a pump that withdraws the groundwater to lower the water table and thereby expanding, or deepening, the vadose zone.

This increases the effectiveness of the vacuum extraction by exposing residual contaminants that have collected under the water table (Roy, Hazmat World, November 1991 at page 84).

3. Steam Injection; Steam injection has been successfully used in conjunction with SVE at several sites. (SITE Technology Profile, Udell Technologies, Inc.) The advantages of injecting steam over the injection of air is that the steam will effect a more complete and more rapid removal of contaminants. If pilot studies indicate that adequate contaminant removal by SVE/air injection cannot be accomplished, steam injection may be a viable alternative.

## II. UNADDRESSED CONTAMINATION

### A. Deep-Soil VOC Contamination

The Remedial Investigation shows that contamination has migrated off-site. Most of the off-site areas where contamination has been detected in the deeper soils do not pose a threat to human health or the environment. However, there are certain areas where the off-site contamination does pose a risk and the Proposed Plan fails to address how those areas will be remediated or contained so as to prevent further degradation of the underlying aquifer.

There are two aspects to the off-site contamination concerns. First, there is off-site contamination of the fairly shallow soils. Off-site shallow soil contamination will be discussed in the next section of this memo. Second, there is off-site contamination of deep soils. In the six off-site borings made, some degree of VOC contamination was discovered.

Table 1, below, summarizes the contaminate levels and depths associated with the off-site borings.



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Boring and location	Depth (Feet)	Constituents (ug/Kg)
SBB3 (East of the site, across from the RR tracks)	10	4-Methylphenol 350 Toluene 9
	20*	4-Methylphenol 350 Toluene 13
	35	4-Methylphenol 370
SBP3 (Near Northeast corner of the site)	12.5	Toluene 130
	17.5	Toluene 23
	32.5*	TCE 7 Toluene 10
SBP4 (North of North-central portion of backyard on Bruno's)	13.5*	Toluene 20 TCE 6
	21.5*	Toluene 14
	36.5*	Chloroform 2
SBP1 (North of North-east corner of front yard behind the market)	10	Chloroform 47 Ethylbenzene 99 4Meth2Pentanone 63 Tetra CE 65 Toluene 1,100 TCE 110 Total Xylenes 140 Ethylbenzene 99 1,2-Dichloro-benzene 3,500
	25*	Chloroform 26 4Meth2Pentanone 51
SBB1 (North of North-east corner of front yard in the trailer park)	15*	4-Methylphenol 400 Toluene 120
	30*	4-Methylphenol 360
SBB2 (South of front yard in the private residences)	15	4-Methylphenol 420 Toluene 94
	35	4-Methylphenol 360 Toluene 16

\*Other constituents were detected in several of the borings but were not included in this table because the data was qualified as usable for limited purposes.

TABLE 1: DEEP SOIL CONTAMINATION

The predominant chemicals found were toluene and 4-methylphenol. The properties of these chemicals are described below:

Toluene is a mutagenic substance which also effects the central nervous system. Toluene is derived from coal tar and is sold in commercial grades. The OSHA standard is 200 ppm TWA (in air). It has a vapor pressure of 3.8 kPa at 25 degrees and has a solubility of 515-627 g/cubic meter in water. Toluene is a RCRA listed waste, F005.

4-Methylphenol is also known as p-cresol. Cresol (a mixture of isomeric cresols obtained from coal tar) is corrosive to the skin and mucus membranes. Absorption may result in damage to the kidneys, liver and nervous system. The OSHA standard is 5 ppm (skin) TWA. The recommended standard for occupational exposure is 10 mg/cu. meter. P-Cresol has a vapor pressure of 1 mm at 53 degrees. Cresol is a RCRA listed waste, F004. Cresol is also a contaminant for the toxicity characteristic with a maximum TCLP concentration of 200 mg/l.

The presence of toluene and cresol provides an indication that there may be other chemicals present in the deep soils as the substances for which the soil samples were analyzed was limited. In addition to the two substances mentioned above, the soil samples were analyzed for the following organic substances:

Methylene Chloride	Acetone
1,2-DCA	Chloroform
TCA	Ethylbenzene
Phenol (SBB series only)	Naphthalene
Fluorene (SBB3 only)	Phenanthrene
Anthracene	Benzo(a) Anthracene
Bis(2-Ethyl-hexyl) Phthalate	Chlorobenzene
1,2-Dichloropropane	Di-n-Octylphthalate
TCE	DCE
1,2-Dichlorobenzene (SBP1 only)	
1,4-Dichlorobenzene (SBP1 only)	
1,2,4-Trichlorobenzene (SBP1 Only)	

Contaminants expected to be at the site include used motor oil, solvents, and gasoline. There are many potential contaminants for which an analysis was not performed on the

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limited number of samples. Benzene and other isomers of cresol are notably absent from the list of constituents for which the off-site soil samples were analyzed.

It seems clear that the significant levels of cresol would indicate off-site deep soil contamination has taken place. The extent and levels of that contamination are not well defined. Prior to the implementation of a remedy which would not include remediation of the off-site deep soil contamination, a further and more complete analysis should be performed followed by a demonstration that the contaminant levels do not pose a threat of further degradation of the groundwater.

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There is an exception to the above. In the area behind the market (see Table 1, above, boring number SBP1) the contamination was much greater than for the other off-site borings. Several figures in the Remedial Investigation also depict Pond 1 as extending off of the site and into that area. The deep soils in this area should be remediated.

#### B. Off-Site Surface and Shallow Soil Contamination

A sample of surface soils off-site on the western edge of the site showed a lead level of 6,400 ppm (sample number HLA143). Other off-site surface samples also show elevated lead levels (samples SS23, SS05, SS06 and HLA163). Contamination in samples taken from a shallow off-site boring in two of the areas showing surface contamination indicate that the contamination extends to some depth below the surface. Samples taken to 3.5 feet deep on the western edge of the site showed high levels of organics and lead (sample location ABP13). Samples from off-site shallow borings behind the market contained high levels of organics and inorganics (sample locations ABP10, SBP1). Efforts should be made to remove these soils for on-site disposal and further verification to assure that all off-site surface soils do not pose a hazard to human health and the environment.

#### C. Front Yard Contamination

The May 1992 "Soil Solidification Feasibility and Cost Evaluation" does not indicate that the SVE system will be included for the front yard area of the site (See Attachment 1). While the limited sampling performed on the eastern side of the front yard may warrant this exclusion, certainly

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the sample analysis results for the western-central portion of the front yard does not (sample SB13). The SVE system should extend to some distance into the front yard as determined by sampling results.

4C

### III. RCRA EQUIVALENT CAP DESIGN

#### A. Effects of Multiple Wells Through the Cap

Upon completion of SVE phase of the remediation, the wells will be removed and the holes left in the cap will have to be repaired. It is known that one of the primary causes of cap failure is due to failure of seams in the flexible membrane liner ("FML") (EPA Memorandum, Office of Solid Waste and Emergency Response dated July 13, 1989). The continuous placement of the clay layer of the cap in successive lifts is also important to prevent direct pathways through the clay barrier layer (EPA/600/S2-91/008, Project Summary, "Factors Controlling Minimum Soil Liner Thickness"). The emplacement of numerous wells through the cap for the SVE and groundwater extraction wells will necessarily increase the number of seams in the FML and present more direct pathways through the clay layer in comparison to a continuous cap without such holes.

7B

A better course of action would be to install a temporary cap to prevent the infiltration of water into the wastes and insure the proper operation of the SVE system. Then, following the completion of the remediation, the final cap should be installed. The deleterious effects on the cap caused by settlement due to VOC and groundwater removal under the site would also be minimized by following this course of action.

#### B. Type of Materials and Configuration of the Cap

The Proposed Plan includes a diagram of the "RCRA equivalent cap". The figure does not contain specifications as the thicknesses of the various layers and materials. The May 1992 "Revised Soil Vapor Extraction and Cap Feasibility Study" contains some specifications but the thickness of the HPDE layer is not stated. At a minimum, the cap should conform to the requirements of the EPA guidance document entitled "Final Covers on Hazardous Waste Landfills and Surface Impoundments" dated July 1989 (EPA/530-SW-89-047).

2A

C. Gas Collection System

The operation of the SVE system should reduce the amount of gases generated beneath the temporary cap and, at any rate, those gasses should be collected and treated along with the extracted vapors. The treatment of the gas collected in the permanent cap's gas collection system could be done in the system constructed to treat gasses removed via the SVE system and therefore no dual treatment system would be needed.

IV. SLURRY WALL

A. Effects on Remediation of Off-Site Soils

The construction of the slurry wall prior to the operation of the SVE system will inhibit the ability of the SVE system to remove VOCs from off-site soils. In addition, the operation of the SVE system may remove many of the VOCs which would otherwise be released to the air during the construction of the slurry wall. Thus, like the permanent cap, it would be preferable to install the slurry wall following the termination of the operation of the SVE system.

B. Depth of the Slurry Wall

EPA should provide justification for the selected depth of 25 feet for the slurry wall. The May 1992 "Revised Soil Vapor Extraction and Cap Feasibility Study" states that rubble encountered during the excavations for the slurry wall would be hauled off-site for disposal in a RCRA landfill. The rubble encountered during excavations for the slurry wall should be disposed of on-site as off-site disposal is unnecessary. Additional on-site disposal capacity will be gained by relocation of the canal (see discussion below).

C. Air Emissions During Excavations

Air emissions should be monitored on a real time basis. Dust and organic vapor levels which present a risk to human health, either to nearby residents or on-site workers, should be determined prior to the initiation of construction activities.

V. RELOCATION OF THE CANAL

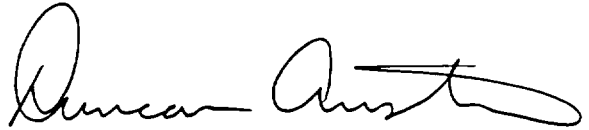
The present location of the canal would place it

Tony Landis

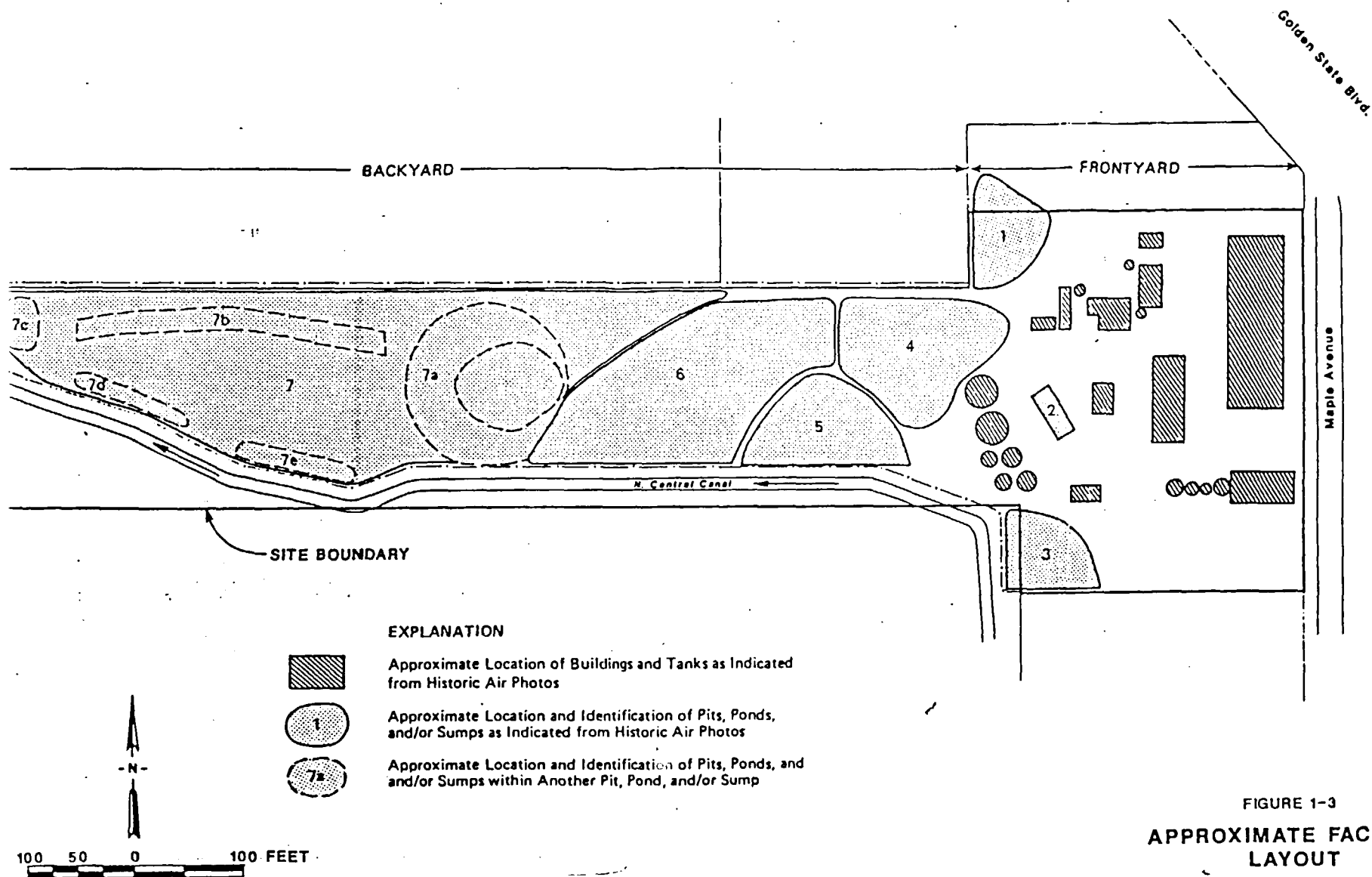
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underneath the proposed cap in the southeastern corner of the facility. That location presents obvious difficulties with canal maintenance. The canal should be relocated as far to the southern and western edge of the site as possible. If this is done, removal of canal sediments may not be necessary, additional capacity for slurry wall trench spoils will be gained and less excavation into the waste material for the emplacement of the retaining wall will be needed. Also, the cap need not extend over the canal so that the canal maintenance involving excavation of the canal can be more easily performed.

9B

A handwritten signature in black ink, appearing to read "Duncan Austin", with a stylized, sweeping flourish at the end.

Duncan Austin  
Waste Management Engineer



# Vacuum extraction provides in situ cleanup of organics-contaminated soil

By Kimberly A. Roy

If only removing contaminants from soil were as easy as removing dirt from a carpet. For some sites, this wishful thinking has been translated — loosely — into reality with an innovative technology known as vacuum extraction.

Vacuum extraction was baptized under fire at a Superfund site in Puerto Rico. It was developed there by Jim Malot, a consultant, and Melvin Visser, an engineer with Upjohn Co. (Kalamazoo, Mich.), which owned the site and initiated cleanup in response to USTs leaking carbon tetrachloride. The site contained about 1 million cubic yards of contaminated soil, including clay and fractured rock, Malot recalls. When the contamination was discovered, he continues, EPA proposed excavating the site or flushing the solvent from the clay soil into the aquifer. However, neither option sounded promising to Upjohn, and Malot and Visser in 1982 began developing the concept of vacuum extraction.

Once developed, the technology originally met resistance from EPA, whose officials doubted it would work, Malot says. However, the Agency finally was persuaded to give it a chance, and the first extraction well was installed in January 1983. When fully operational, the system removed 250 pounds per day of carbon tetrachloride, and the soil was declared clean in 1987. After vacuum extraction's successful debut in Puerto Rico and at more than 50 other sites around the United States, attitudes about the technology "changed 180 degrees," Malot says, and it joined the market as an innovative cleanup technique.

Malot acquired sole rights to the technique in 1987, when Upjohn decided the technology did not fit well with its primary business — pharmaceuticals. Today, he holds two process patents on vacuum extraction covering the basic concept whereby volatiles are recovered from the vadose, or unsaturated, zone, which lies between the ground's surface and water table. Several companies challenged the original patents, but a detailed review by the U.S. Patent Office eventually upheld the original claims in their

entirety, Malot relates.

Since then, the technology has been through "the normal evaluation process," Malot says, including a 3 1/2-year stint in EPA's Superfund Innovative Technology Evaluation (SITE) program. Vacuum extraction entered the program as a technology offered by Terra Vac Inc. (San Juan, Puerto Rico), the technology's first licensee. As part of the SITE program, vacuum extraction was demonstrated at the Valley Manufactured Products Co. Inc. site in Groveland, Mass. The area, which was contaminated primarily by trichloroethylene, is part of the Groveland Wells Superfund site.

*A vacuum system induces air flow through the vadose zone, stripping and volatilizing VOCs from the soil into the air stream.*

During the eight-week test run, 1,300 pounds of volatile organic carbons (VOCs) were extracted. Results showed "a steady decline in the VOC recovery rate with time, a marked reduction in soil VOC concentration in the test area, and an indication that the process can remove VOCs from clay," according to a May 1989 EPA report.

**How it works.** A basic system consists of three components — one or more wells installed in the treatment zone, vacuum equipment, which is the driving force behind the process; and a vapor treatment technique. Water extraction equipment also may be required.

Once a contaminated area is characterized, extraction wells are installed. A vacuum system induces air flow through the vadose zone, stripping and volatilizing VOCs from the soil into the air stream. Water usually is extracted along with the contamination. According to an EPA SITE report, the two-phase flow of contami-

nated air and water flows to a separator, which removes contaminated water. Contaminated air then flows to a vapor treatment system, such as activated carbon or catalytic oxidation.

Soil at the Groveland site varied from medium to very fine silty sands near the surface, to a middle layer of stiff and wet clays, and sand and gravel closer to the groundwater. Contaminant levels ranged from 200 ppm to 1,600 ppm before the demonstration, which involved four wells installed at a depth of 24 feet. Soil porosities ranged between 40 percent and 50 percent, and permeabilities ranged from 10<sup>-4</sup> centimeters per second (cm/sec) for the sands to 10<sup>-8</sup> cm/sec for the clay. At the demonstration's conclusion, concentrations ranged from non-detectable to 60 ppm.

According to Malot, who also is president of Terra Vac, the concept of vacuum extraction sounds simpler than it is, depending on a site's specific hydrogeologic conditions. The difficulty is designing, installing and operating a system that considers contaminants, their concentrations and subsurface conditions, including soil permeability and porosity, he says. Hydrogeologic conditions and other site-specific factors dictate the size and strength of the vacuum source, while contaminants and local regulations dictate the type of vapor treatment technique. For example, high mass-recovery rates call for catalytic oxidation, while low recovery rates typically favor carbon adsorption.

Choosing a vapor treatment technique is based partially on economics, Malot says. Carbon adsorption becomes prohibitively expensive for high recovery rates, while catalytic oxidation, or low-temperature combustion, is insensitive to them, he explains.

Contaminants also influence selection of a vapor treatment technique. For example, he says, hydrocarbons oxidize more easily than chlorine-containing compounds, although it can be done, as first demonstrated by Terra Vac at a Michigan Superfund site.

Like most technologies, vacuum extraction has limitations; it cannot handle heavy, chlorinated compounds



or hydrocarbons heavier than the mid-diesel range, Malot relates. "It will not recover metals, with the possible exception of mercury, pesticides or heavy organics like fuel oil No. 6," he continues. "Basically, it's limited to contaminants with volatile characteristics," and generally is not applicable to such compounds as dioxin and PCB.

When the technology is applicable to contaminants; it can handle them in the percent levels. "We can get grossly contaminated sites down to 10 ppb or non-detectable," Malot says. Sizing, or scaling, up is not a problem for the technology, which is effective for contamination as shallow as 3 feet and as deep as 300 feet. Costs vary with site conditions but generally run between \$10 and \$40 per cubic yard, he adds.

The key to successful use of vacuum extraction lies in "getting a clear understanding of subsurface conditions," Malot asserts. "Most often, they're not well defined and typically require more work and some adjustments (during operation), as necessary. It requires a lot of interpolation, interpretation and knowledge of chemical behavior in the subsurface environment."

**Third-party opinion.** Ciba-Geigy Corp. (Ardsley, N.Y.) chose vacuum extraction to remediate a 5-acre site in Pennsylvania contaminated with percent levels of volatiles and some semivolatiles. Contamination, including trichloropropane, toluene and xylene, reached an average depth of 15 feet and a maximum depth of 20 feet, says project manager Karlene Tierney. Before choosing vacuum extraction, company and EPA officials discussed several other options, Tierney recalls, including excavation, capping and draining the site. However, underlying bedrock presented concerns about capping, and the close proximity of a large residential area aroused company concerns about the safety of excavation, she relates.

Vacuum extraction first attracted Tierney's attention at an unrelated PRP meeting, where it was discussed as an alternative, she says. Meanwhile, a company consultant also read about the technique, and the two agreed to explore it further. The vacuum extraction system eventually installed has been operating for 2 1/2 years.

The system has been operating relatively smoothly, but problems associated with the soil's heterogeneity are an ongoing problem, Tierney says. For example, she says, the cleanup crew recently discovered a layer of rock that has caused some

interference. "Above the rock, cleanup has been very good, but not as consistent underneath," she explains. The first few months of operation also saw the formation of tar in some of the wells. Heat and decane cleaning have minimized the problem, although the cause has never been determined with certainty because the situation could not be recreated in the lab, she adds.

Besides difficulties defining the site, "our biggest problem has been estimating the initial contamination levels," Tierney says. "It was not possible to identify with any degree of certainty how much there was initially." Extracted vapors show "enormous" reductions, but "we don't know how long it will take to meet the cleanup standards," she concludes. Target cleanup levels under a consent decree with EPA are an average of 50 ppb each for four compounds — trichloropropane, trichloroethylene, perchloroethylene and benzene.

The consent decree originally called for final soil sampling in November 1990, but at that time, "we knew we were not down to those levels, and EPA ... is in the process of amending the consent decree," Tierney says. No specific date had been set at press time. High contaminant concentrations initially precluded use of biodegradation, but the company may use it as a polishing step when the project gets closer to completion, which Tierney says she hopes will come "within a few years."

Although cleanup has been more time consuming and costly than originally anticipated, "we don't regret (our choice) at all of an *in situ* remedy because of the nearby residential area," Tierney says. "We chose Terra Vac because they had by far the most experience cleaning up sites with percent levels of contaminants."

**California cleanup.** Canone Environmental Services Corp. (Porter, Ind.), also a licensee, recently used vacuum extraction to remediate about 10,000 cubic yards of contaminated soil at a California site. Contaminants at the site, located in a light commercial area, included perchloroethylene and trichloroethylene in concentrations greater than 630 ppm. Contamination reached a depth of 40 feet, and was beneath and adjacent to the corner of a building.

System design included 16 air extraction wells. Two wells — one shallow and one deep — were installed in each of eight locations, relates Oliver Wesley, vice president of Rocky Mountain Operations (Denver). Wells near the building were drilled at an

angle to reach contamination there. Two liquid vacuum pumps provided an air flow rate of 80 square cubic feet per minute at 22 inches of mercury. Vapors were treated with carbon adsorption.

Cleanup levels originally were set at non-detectable based on TCLP analysis but were renegotiated to about 2 ppb, Wesley relates. During 18 months of operation, the system removed more than 14,000 pounds of solvent, he says. The only problem encountered during that time involved contamination at a depth of about 25 feet and required focusing the vacuum in those areas, he adds.

The technology was chosen for the cleanup from several options, including excavation and landfilling, excavation and land farming, excavation and incineration, and volatilization, Wesley recalls. It was chosen primarily because of economics, he adds. "It (vacuum extraction) was about two-thirds the cost of the closest other option," he says, "about \$2 million vs. more than \$3 million."

"It worked great," Wesley continues. "I think it has real good specific applications, and especially below existing structures, where contamination is not easily accessible."

John Gentry, senior environmental engineer with Post-Buckley, Schum & Jernigan (Orlando, Fla.) and former administrator of the Florida Department of Environmental Regulation's Office of Technical Support, agrees. "I haven't seen a cost comparison, but my sense is that vacuum extraction is very cost competitive for sites where it would work," he says. Besides cost savings, he adds, vacuum extraction offers another important benefit — it allows such sites as gas stations to continue operating during cleanup, which would not be possible with excavation.

"I like the technology very much," Gentry says. "I'm very impressed and surprised it's not used more. That mystifies me. A lot of people don't want to spend a little more to do the necessary assessment work on the front end, but that's false economics. The bottom line in cleanups is killing the source of contamination. If you don't kill the source, you'll be out there forever trying to clean up groundwater. Killing the source is what vacuum extraction does very well."

Despite Gentry's assertions that vacuum extraction is being underused, it has been cited more than any other innovative technology as a remedy at Superfund sites, according to a report released in January by the EPA Office

of Solid Waste and Emergency Response Technology Innovation Office. According to the report, innovative technologies have been identified in 37 percent of all records of decision (RODs), and vacuum extraction techniques account for 12 percent of those. Of a total of 31 vacuum extraction projects, one has been completed, five are being installed or are operating, and 25 are in the pre-design or design stage, the report says.

"I think it has basically been accepted as a viable, demonstrated technology by EPA and most state organizations," Malot concludes.

*Of a total of 31 vacuum extraction projects, one has been completed, five are being installed or are operating, and 25 are in the pre-design or design stage.*

Strategies. Besides Terra Vac and Canonie, licensees include CH<sub>2</sub>M Hill (Englewood, Colo.) and DOE's Savannah River Plant site (Aiken, S.C.). Malot's biggest problem, however, has not been industry acceptance but companies infringing on his patents.

Although he concedes he does not know how widespread the problem has become, Malot says he intends to protect his interests. "My approach all along is to make a license available to everybody who wants one. However, there comes a time when it becomes obvious that some people are choosing to infringe rather than take a license, and I'm obligated to do something about it."

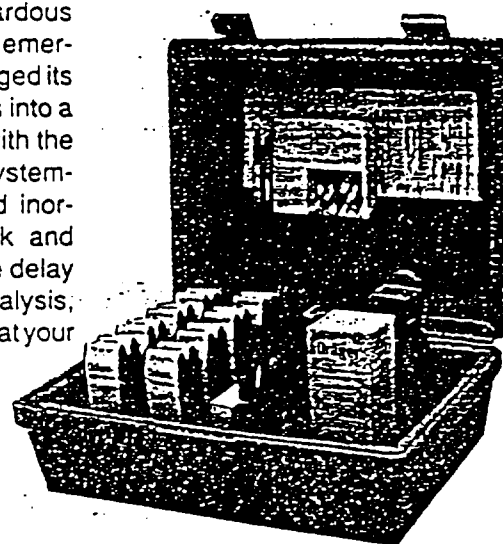
Last year, Malot filed suit against Roy F. Weston Inc. (West Chester, Pa.), based on preliminary information that the company was using the technology without a license, he relates. The suit in June was withdrawn without prejudice to later re-instatement, when Malot and Weston agreed to make "a serious effort" to negotiate a licensing agreement rather than pursue litigation. An agreement had not been reached at press time, but negotiations were continuing. However, "I intend to enforce my patents and ... will take the legal route (against others in the future) if necessary," Malot concludes. ▼

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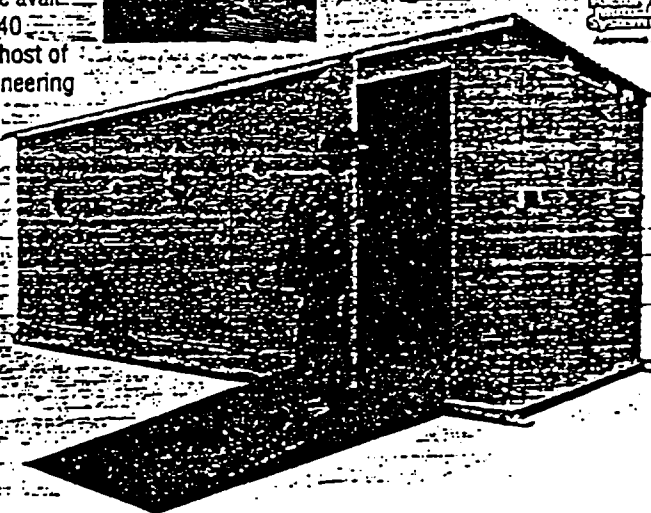
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DAVID A. JUHNKE  
STEVEN J. ADAMSKI  
WILLIAM P. CLARK

SINSHEIMER, SCHIEBELHUT & BACCETT  
A PROFESSIONAL CORPORATION  
ATTORNEYS AT LAW  
POST OFFICE BOX 31  
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THOMAS D. GREEN  
CHRIS N. BRUMFIELD  
ROY E. OGDEN  
THOMAS J. MADDEN III  
CHRIS A. CARR  
MARIA L. HUTKIN  
NINA NECRANTI

CLIENT 1478001

July 10, 1992

Janet Rosati  
United States EPA, Region IX (H-6-1)  
75 Hawthorne Street  
San Francisco, California 94106

Re: Purity Oil Sales Superfund Site

Dear Ms. Rosati:

This letter is written on behalf of the County of Fresno ("County") as a comment on the draft proposed plan for soil remediation. Initially, we respectfully request an extension of the public comment period for thirty (30) days. The reason for this request is that the County did not receive the draft proposed plan or supporting documentation in sufficient time to allow for a meaningful analysis and review. Because the site is located within its jurisdiction, it is vital that the County have a full opportunity to consider the short-range and long term impacts of the proposal. That opportunity has not been provided.

The County also lodges a general objection to the draft proposed plan to the extent that it is inconsistent with County Ordinances or State law. The County's overriding consideration in this matter is public health and safety. That interest is served only if contamination is remedied, removed, or permanently confined to the site.

Beyond those general objections and concerns, the County has the following specific comments:

1. The EPA should address the possible lining or enclosure of the canal adjacent to the site. The County is concerned with water contamination if the canal is not lined or enclosed. 9B
2. The EPA should address the treatment of soil below 40 feet to the existing or potential water table. The County is concerned as to whether the proposed Soil Vapor Extraction System ("SVE") adequately provides for the long-term treatment of that soil layer. 4B

Janet Rosati  
July 10, 1992  
Page 2

3. The EPA should consider whether the slurry wall is appropriate. It appears that the wall will extend beyond the site limits to adjacent property. The County would like some assurance that the proposed slurry and that the proposed SVE system will in fact result in removal of contaminants from layers A and B. The County is concerned that in the long run the SVE system proposed will not achieve significant removal from those layers. 1A  
4D
4. The County questions the necessity of a RCRA cap. It appears that a lesser cap will perform as well or better, at a much reduced cost. Further, any future need to remove or treat contaminants would be much more expensive with a RCRA cap in place. 2A

These comments are preliminary because of the limited time for review. The County reserves the right to modify or add to these comments. The County again urges the EPA to extend the time for public comment and allow an adequate opportunity for meaningful review.

Very truly yours,

SINSHEIMER, SCHIEBELHUT & BAGGETT



THOMAS D. GREEN  
For the County of Fresno

TDG/tlg  
gBLEV710.1tr

cc: Tim Casagrande

WARREN A. SINSHEIMER III  
ROBERT K. SCHIEBELHUT  
K. ROBIN BAGGETT  
MARTIN J. TANGEMAN  
THOMAS M. DUCCAN  
MARTIN P. MOROSKI  
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NINA NEGRANII

August 10, 1992

Janet Rosati  
United States EPA, Region IX (H-6-1)  
75 Hawthorne Street  
San Francisco, California 94106

Re: Purity Oil Sales Superfund Site

Dear Ms. Rosati:

This letter represents further comments of the County of Fresno to proposed Operable Unit #2 on the Purity Oil Sales Superfund Site located in Malaga, California. These comments are intended to supplement (and when inconsistent supercede) the County's comments contained in our letter to you of July 10, 1992. The County reserves the right to modify or supplement these comments upon further investigation or analysis.

1. Based on available hydraulic modeling work, it appears the canal exerts no hydraulic influence on the site or the plume. The need for piping the canal based on other remedial design impacts to the canal structure should be evaluated. A slurry wall adjacent to the canal might provide a barrier to potential hydraulic influences. 9A & 9B
2. A 24-foot slurry wall across the entire site appears excessive. The dimensions of the wall should be site specific and based upon relationship to contaminated soil. Areas below 14 feet where the proposed Soil Vapor Extraction (SVE) system would be operating, around the perimeter of the "front yard" area and in areas where there are sufficient non-contaminated zones, such that movement of contamination would not leave the site, should not undergo installation of the slurry wall. 1A
3. A RCRA cap over the entire area is unnecessary. As proposed, the stability of the cap requires an eight-foot high two-foot tick retaining wall. A thinner cap with HDPE liner, one-foot reinforced concrete, and one foot of vegetation would reduce infiltration, control potential migration, prevent access to site materials and reduce or eliminate the need for a retaining wall. Also, 2A & 3.

Janet Rosati  
August 10, 1992  
Page 2

the cap should be targeted to areas of contamination, such as, the disposal pits. This could save considerable costs while providing adequate protection of the Site.

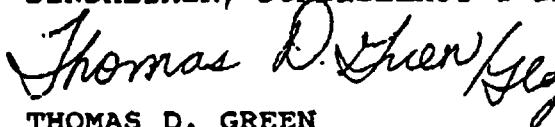
4. There should be a pilot study conducted on the contaminated vadose zones to properly locate and design a Soil Vapor Extraction system. Modifications to the proposed SVE system may need to occur based upon slurry wall installation requirements around the entire Site.

4B

The County appreciates the extended opportunity provided for public comment and welcomes any questions regarding its position on the proposed remediation.

Very truly yours,

SINSHEIMER, SCHIEBELHUT & BAGGETT



THOMAS D. GREEN  
For the County of Fresno

TDG/tlg  
gROSA710.1tr

cc: Phillip S. Cronin, Esq.  
Tim Casagrande

Pacific Gas and Electric Company

Environmental Services  
P.O. Box 7640  
San Francisco, CA 94120  
415-973-7000  
Direct Dial 415-973-  
Teletype 415/973-3201

August 10, 1992



Ms. Janet Rosati  
Remedial Project Manager  
United States Environmental Protection Agency  
Region IX  
75 Hawthorne Street (H-6-1)  
San Francisco, California 94105

Dear Ms. Rosati:

RE: Purity Oil Sales Site, Proposed Operational Unit No. 2  
(OU2) Soil Clean-up Plan

Thank you for extending the comment period for the proposed Purity Oil Sales Site OU2 soil clean-up plan from July 10, 1992 to August 10, 1992. We appreciate the extra time to fully evaluate available pertinent information and prepare our comments, summarized in Attachment 1, for your consideration and response.

Although PG&E is a member of the Purity Oil Sales Site Steering Committee and Technical Committee (established to address OU1), PG&E has elected to supplement comments prepared by the committees regarding the OU2 soil clean-up plan as proposed by the United States Environmental Protection Agency (U.S. EPA). Our comments address an underlying concern regarding the technical and managerial direction that the Purity Oil Sales Site project is taking.

PG&E has an interest in working closely and cooperatively with regulatory agencies in addressing environmental projects such as the subject site. If you have any questions regarding the attached comments, please contact me at 973-7694. Thank you for your cooperation.

Sincerely,

A handwritten signature in cursive script, reading "Patricia L. Nelson".

Patricia L. Nelson  
Environmental Specialist

Attachments

cc: Mr. Martin Hausladen  
U.S. EPA - Region IX

Matthew Strasberg, Esq.  
U.S. EPA - Region IX

Mr. Duncan Austin  
California EPA - Department of Toxic Substances Control



## ATTACHMENT 1

### PG&E Comments of the U.S. EPA-Proposed Purity Oil Sales Site Operational Unit No. 2 (OU2) Soil Clean-up Plan

#### Managerial Concerns

- 1) The proposed soil clean-up plan indicated that the "carcinogenic risk associated with the site was determined by the U.S. EPA (EPA) to be within or below the acceptable risk range of 1 in 10,000 to 1 in 1,000,000". In addition, the Hazard Indices (HI) calculated for soils within the first foot of ground surface was greater than 1, defined to be a potentially unacceptable non-carcinogenic health risk; soils below 1 foot of the surface were determined to have HI values of less than one, which represent an acceptable non-carcinogenic health risk.

Based on the EPA risk assessment it appears the site does not pose an imminent risk to human health or the environment. Because the site does not pose an imminent health or environmental risk is the EPA willing to consider reversing the order of the OU1 (ground water) and OU2 (soil) clean-ups? If not, can the EPA consider coordinating the timing of the OU1 and OU2 clean-ups to minimize the impact of their respective incompatibilities (defined further under "Technical Concerns")? By doing either or both it appears that certain of the ground water and soil clean-up technologies would operate in an orchestrated fashion rather than a competing fashion. For example, the use of a soil vapor extraction system (SVE) requires wells be placed through an engineered cap. Such an infrastructure which penetrates the cap surface may limit the effectiveness of the cap because infiltration is not prevented at the well heads.

- 2) A reduction of volatile organic compound (VOC) concentrations in soils by employment of the SVE constitutes a source treatment. Source treatments often reduce or preclude the need for elaborate ground water treatment systems. To PG&E's knowledge the EPA has not defined the relationship between the chemicals found in on-site soil and in ground water. Would EPA consider performance of additional field studies to determine the relationship between chemical sources in soil and ground water prior to the final design of the OU2 and OU1 clean-up plans?
- 3) The southeast corner of the U.S. EPA-defined site comprises approximately 0.5 acres and is known as Assessor's Parcel Number (APN) 330-06-05. The owner of

13A

13B

7B

13C

1F

ATTACHMENT 1 (continued)

PG&E Comments of the U.S. EPA-Proposed Purity Oil Sales Site  
Operational Unit No. 2 (OU2) Soil Clean-up Plan

Managerial Concerns (continued)

record to APN 330-06-05 is the Fresno Recycling Company (refer to Exhibit 1). To PG&E's knowledge, the owner of APN 330-06-05 has not been identified as a potential responsible party (PRP) for the Purity Oil Sales Site. Please explain how the property owner of a portion of a federal Superfund site may have been apparently omitted from the list of PRPs responsible for carrying out the proposed treatment plans.

15

Technical Concerns

- 1) The EPA estimated the mass of highly leachable organic waste and reported the results in the Public Comment Feasibility Report, April 1989. In that report, the EPA estimated the mass of leachable volatile organic compounds (VOC) in Layers A and B to be 454 pounds, and in Layer C as 25 pounds for a total of 479 pounds. According to the Revised Soil Vapor Extraction and Cap Feasibility Study, May 1992, there is an estimated VOC mass in Layers A and B of approximately 71,801 pounds and an estimated VOC mass in Layers C, D, and E of 24,387 pounds. Please provide the basis for and calculations which led to the estimates of VOC mass in each of the layers and an evaluation of the accuracy of the estimates.
- 2) The Revised Soil Solidification Feasibility and Cost Evaluation, May 1992 reports the results of EPA's revised VOC mass estimate. The estimate is reportedly based on soil sample results reported in the Supplemental Remedial Investigation Report, October 1988, and the Final Supplemental Report - Soil and Groundwater Sampling, August 1990, for Layer C samples (samples at 12 to 20 feet below ground surface). We understand an average VOC concentration in soils in Layer C was derived from the analytical data for soils (summarized in Table 1 in Exhibit 2) and was determined to be 134 parts per million (ppm, Table 2-4 in Exhibit 2).
  - a) The highest concentration of VOC in Layer C was from Soil Boring No. SB13-02 with a total VOC of 127 ppm. Please explain how the average concentration of VOC was determined to be 134 ppm.
  - b) An average VOC concentration of 134 ppm does not

12C

12B

12C

ATTACHMENT 1 (continued)

PG&E Comments of the U.S. EPA-Proposed Purity Oil Sales Site  
Operational Unit No. 2 (OU2) Soil Clean-up Plan

Technical Concerns (continued)

appear to be supported by the compilation of soil sample results summarized in Table 1 (which were reported in the Supplemental Remedial Investigation Report, October 1988, and the Final Supplemental Report - Soil and Groundwater Sampling, August 1990). Please comment on whether EPA believes that such contradictions in data supports the development of a SVE system to treat site soils.

4F

- 3) According to the Remedial Investigation Report, the locations of soil borings were selected for the purpose of investigating known or suspected areas where concentrations of site residues could be the highest. The non-randomness of the soil boring locations (as well as sample depth) can prejudice the estimated average concentrations of residues. According to the Feasibility Study Report the proposed layout of SVE wells covers the entire site area including locations where non-detectable concentrations of residues were observed. Please explain the rationale behind the assumptions for deriving the average concentrations of VOC to be treated by the SVE and establishing the proposed locations of the SVE wells.

4B

12A

12B

- 4) The SVE has been proposed because its intent is to recover VOCs and by doing so protect ground water. Leachability studies performed by the EPA, as summarized in the Public Comment Feasibility Report, 1989, determined that following the installation of the cap, migration of VOC to ground water would not be significant. Therefore, the SVE appears to provide no additional protection to ground water beyond that provided by the cap. The presence of the SVE (e.g., its penetration through the cap creating potential conduits for migration of contaminants to ground water) may compromise the cap's effectiveness. Please explain the usefulness of and financial justification for the SVE in reducing the potential risks to human health and environment that the site may pose.

4A

- 5) We understand from the Feasibility Study, as revised, that the vacuum pressure of the SVE has been proposed to be six inches of mercury. This pressure may result in a rise in the elevation of the ground water table by up to seven feet. A rising ground water table could dissolve site residues and negatively affect the design and operation of the OU1 clean-up system. Please

7C

ATTACHMENT 1 (continued)

PG&E Comments of the U.S. EPA-Proposed Purity Oil Sales Site  
Operational Unit No. 2 (OU2) Soil Clean-up Plan

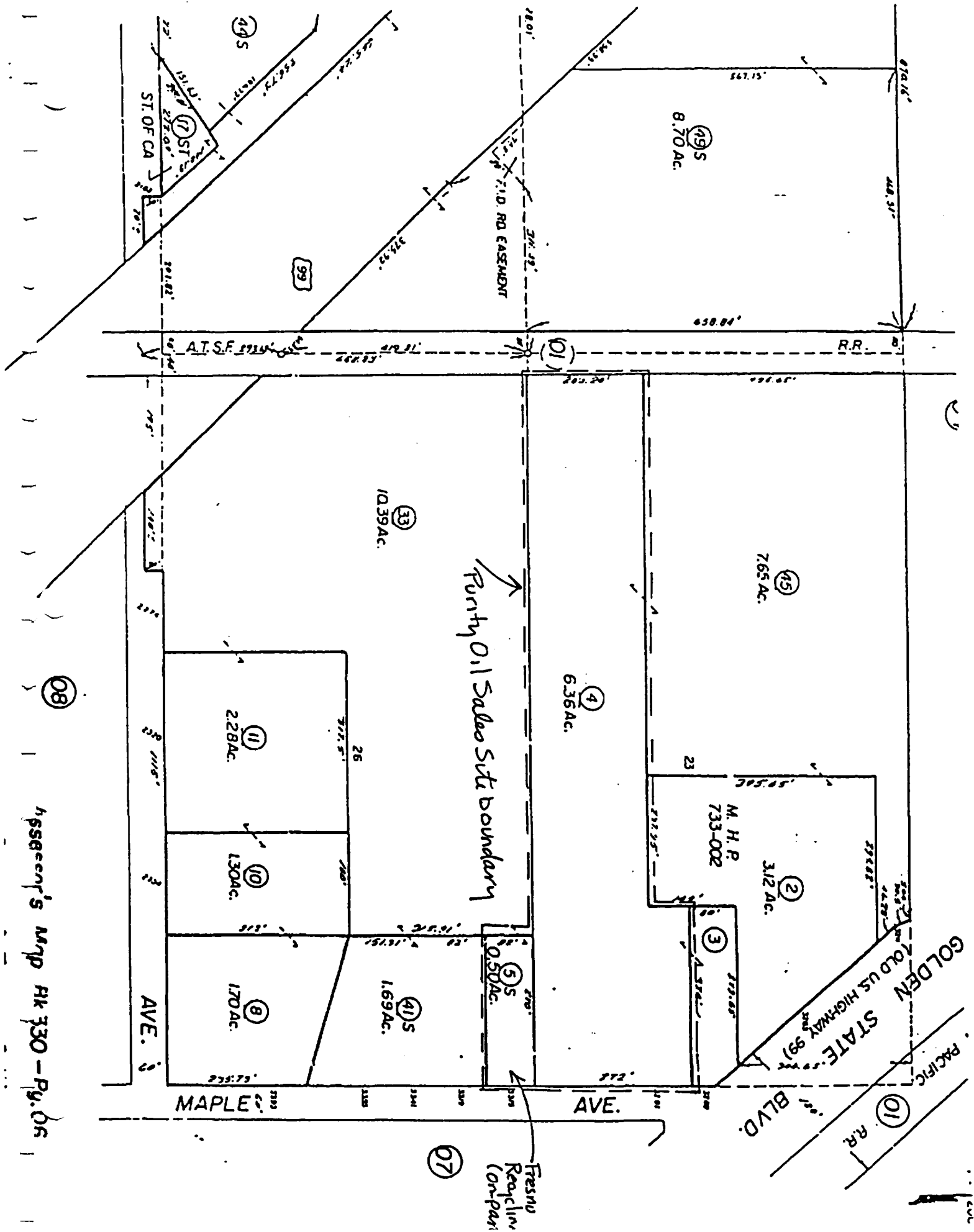
Technical Concerns (continued)

provide an explanation of the compatibility of the SVE treatment for OU2 and its potential impact on the proposed treatment for OU1 for ground water.

- 6) The SVE references cited by the EPA in the Soil Solidification Feasibility Study, May 1992, report a rapid attenuation of VOC in extracted air indicating mass recovery rates are not constant. Please explain the effect of a rapid drop in mass recovery rate on the estimated clean-up time and cost. 11B
- 7) The SVE is a licensed technology. Please explain whether the licensing costs are included in the cost estimate. 11C
- 8) The preferred alternative identifies installation of a 25 foot "hanging (not keyed to stable underlying geological formations)" slurry wall. The apparent purpose of the slurry wall to a depth of 25 feet below surface grade is to form a lateral barrier within subsurface soils and "further minimize the leaching of contaminants to ground water". Because the slurry wall is not a barrier to vertical migration of ground water and is not designed to intersect, or contain, the lateral migration of ground water (which occurs approximately 45 to 50 feet below surface grade), please explain how the slurry wall will "further minimize the leaching of contaminants to ground water" more effectively than the proposed cap. 1A

**EXHIBIT I**

Parcel comprising  
Punth D:1 Sale site



**TABLE 1**  
**C-LAYER SOIL SAMPLE DATA FOR SELECTED VOLATILE ORGANICS**  
**PURITY OIL SALES SITE**  
(all values in parts-per-million)

<u>SAMPLE</u>	<u>LOCATION</u>	<u>DEPTH</u>	<u>BENZENE</u>	<u>TOLUENE</u>	<u>ETHYL- BENZENE</u>	<u>XYLENE</u>	<u>CHLORO- BENZENE</u>	<u>TCE</u>	<u>2-BUTANONE</u>
SB2-05	2 to 3	15-16.5	NA	0.23	<0.01	NA	<0.01	0.01	<0.01
SB13-02	8 to 9	12-13.5	<0.75	1.8	2.2	120	<0.75	0.01	<1.5J
SB14-01	8 to 9	17-18.5	<0.005	0.002J	<0.005	NA	<0.005	<0.01	0.003J
SBB1-03	0 to 1	15-16.5	NA	0.12	<0.01	NA	<0.01	0.01	<0.013
SBB2-03	2 to 3	15-16.5	NA	0.094	<0.01	NA	<0.01	0.01	<0.014
SBP2-06	6 to 7	15-16.5	<0.019	0.33	0.046	0.05	<0.019	<0.01	<0.039J
SBP3-02	0 to 1	12.5-14	NA	0.13	<0.01	NA	<0.01	<0.01	<0.013
SBP3-03	0 to 1	17.5-19	NA	0.023	<0.01	NA	<0.01	<0.01	<0.012
SBP4-04	4 to 5	13.5-14.5	NA	0.02	<0.01	NA	<0.01	0.01	0.028J
SBP6-06	8 to 9	15-16.5	<0.026	<0.026	<0.026	<0.026	<0.026	<0.01	<0.051
B2-10	7 to 8	15-16.5	NA	0.21	0.19	NA	<0.01	XD	NA
B23-08	8 to 9	12.5-14	0.04	2.8	2	NA	XD	0.48	NA
SB-15	8 to 9	12-13.5	ND	ND	ND	16	ND	ND	ND
SB-15	8 to 9	18-19.5	ND	2.3J	1.2J	8J	ND	ND	ND
SB-16	4 to 5	12-13.5	ND	ND	ND	ND	ND	ND	ND
SB-16	4 to 5	15-16.5	ND	0.043	ND	ND	ND	ND	ND
SB-17	2 to 3	13-14.5	ND	0.004J	ND	ND	ND	ND	ND
SB-17	2 to 3	16-17.5	ND	1.1J	ND	ND	ND	ND	ND
C-Layer	Composite Sample		ND	ND	ND	ND	ND	ND	ND

ND-Denotes compound non-detected in sample; J- Flag for QA/QC problems for sample.  
Location refers to site cross-sections from Figure 3-4 of Remedial Investigation Report.  
C-Layer includes all soil samples from 12 to 20 feet below ground surface.

SVE systems can be operated in areas with or without a cap system and with or without adjacent wells for air injection. The waste pit portion of the Purity Oil Sales site will be covered with a soil and clay cap system. The cap system and intervening layers of solidified material will certainly create a large amount of resistance to pulling air into the wells from the surface. Therefore, it will be necessary to install injection wells, strategically placed between the extraction wells, to maintain the flow of air through the contaminated layers.

Quantity & Type of Contaminants. As stated above in Section 2.3, "Thermal Stripper and Material Handling," the soil sampling results presented in the "Remedial Investigation Report"<sup>(1)</sup> and "Final Supplemental Report"<sup>(1)</sup> for the specific soil layers were averaged. The "average" results for the Layers C, D, and E are presented in Table 2-4.

TABLE 2-4 VOC CONCENTRATION IN SOIL LAYERS C, D, & E	
Contaminated Soil Layer	Type and Average Concentration of the Major Volatile Compounds <sup>(1)</sup>
Layer C, average concentration of VOCs in soil (Samples at depths of 12 feet-20 feet)	134,134 µg/kg (134 ppm) Benzene 1.6% Ethylbenzene 12.3% Chlorobenzene 7.0% Toluene 26.2% Trichloroethylene 6.8% Xylene 22.0% 2-Butanone 23.9%
Layer D & E, average concentration of VOCs in soil (Samples at depths of 20 feet - 39 feet)	42,512 µg/kg (43 ppm) Toluene 7.6% Trichloroethylene 35.9% Methylene Chloride 26.2% 4-Methyl-2 Pentanone 4.7% 2-Butanone 6.0%

(1) The major compounds in Layer C are 94% of the total volatile organics in Layer C and the major compounds in Layers D and E are 80% of the total volatile organics present in Layers D and E.

Based on the above results, the total quantity of volatile compounds for each layer was determined as summarized below in Table 2-5.

TABLE 2-5 TOTAL VOCs IN SOIL LAYERS C AND D		
Layer	Amount of Contaminated Soil (yd <sup>3</sup> )	Amount of Volatile Compounds (lb)
Layer C	45,000	16,181
Layers D and E	72,000	8,206





**INTERNATIONAL  
TECHNOLOGY  
CORPORATION**

July 28, 1992

Ms. Janet Rosati  
Remedial Project Manager  
Superfund Program  
U.S. Environmental Protection Agency  
75 Hawthorne Street  
San Francisco, CA 94105-3901

**Subject: Comments on Soil Remediation Alternatives for the Purity Oil Site**

Dear Ms. Rosati:

First of all, I want to thank you for providing me a copy of the Updated Capital and Operation & Maintenance Cost Estimates for the Purity Oil Site.

Secondly, I would like to provide you with a brief explanation of my background. Since the date that I joined IT in 1986, I have been working exclusively in the field of thermal remediation. In my current position as Director of Project Development, Remediation Projects, I am responsible for keeping abreast of all activities in the thermal remediation field. I routinely assist engineering firms (CH2M Hill, Dames & Moore, Bechtel, etc.) and commercial clients generate FS-level and RD-level cost estimates for their thermal remediation projects, and am actively involved in the detailed estimates that IT prepares for major lump sum project work that we bid on (e.g. Bayou Bonfouca, Times Beach, Baird & McGuire, etc.).

I also maintain a rather extensive database that summarizes all of the prices bid on thermal remediation projects since 1987. This database encompasses all bidding firms, not just IT.

Thirdly, I would like to provide you with some initial comments on the cost estimate prepared by ICF Technology for the Purity Oil Site.

I find it highly unusual that the analysis considers purchasing an incinerator to complete this work. On other thermal remediation projects performed and evaluated over the past 5-7 years, the incineration contractor provides a service that includes the cost of utilizing their incinerator to perform the work. To date, the industry participants (IT, Chem Waste Management, Roy F. Weston, Thermacor, OH Materials, etc.) have built at least 12 machines. These machines are typically depreciated over several projects so that one job is not burdened with the total cost of the equipment. This is a multi-million dollar savings to each project.

Based on the volumes being considered for incineration (55,000 tons for Alternative S-3 and 154,000 tons for Alternative S-5), it is highly unlikely that an 8-ton per hour (tph) machine would ever be proposed for this site. It is far more likely that a machine capable of incinerating 20-25 tph would be proposed, since this is the typical size being utilized in the industry today. In fact, depending on equipment availability and the actual quantity to be incinerated, a 30-50 tph machine may even be proposed. This dramatic

Regional Office

312 Directors Drive • Knoxville, Tennessee 37923 • 615-690-3211

*IT Corporation is a wholly owned subsidiary of International Technology Corporation*

Ms. Janet Rosati  
U.S. EPA

July 28, 1992  
Page 2

difference in throughput capacity would have a very significant impact on the overall cost to execute this project.

--  
The profile of the waste and the ash quality objectives could also have a significant impact on the overall cost. Based on our conversation a couple of weeks ago, it sounds like the waste does not have a high Btu content, nor is it very wet. Because the waste contains PCBs, a "high temperature" unit will be required, instead of the "dirt burners" that treat hydrocarbon-contaminated materials at low temperatures and very low prices (\$60-100 per ton).

Assuming that the ash quality requirements will be comparable to other projects (e.g. 2 ppm PCBs), I would expect the total project price per ton to be equivalent to other on-site incineration projects bid during the past few years.

The industry's most recent award went to OH Materials for the Baird & McGuire site in Massachusetts. This project was very complex, in that it involved a myriad of on-site activities to safely treat dioxin- and arsenic-contaminated soil. Site dewatering was very difficult, and repetitive stack sampling was required throughout the project. That project, involving 200,000 tons of soil, was awarded for \$57.9 million, or \$289 per ton.

The Old Midland project, another dioxin project, was awarded to Chem Waste Management for \$13.8 million. Based on an estimated soil quantity of 48,105 tons, the project was awarded at \$288 per ton.

The Times Beach dioxin project, involving hopper-to-hopper incineration of 130,000 tons, is about to be awarded by Ebasco and Syntex for a price well under \$40 million. This will equate to a unit rate of under \$300 per ton.

At the LaSalle PCB project in Illinois, Thermacor was contracted to excavate and incinerate 72,000 tons of soil at a price of \$17.25 million, or \$240 per ton.

At Savanna Depot and the Alabama Army Ammunition Plant, Weston was selected to process explosives-contaminated soil at prices of \$327 and \$241 per ton, respectively.

At the Sikes Disposal Pits site, IT's contract was valued at \$89.9 million to treat 341,000 tons of soil. This equates to a unit rate of \$263 per ton.

Please note that most of these prices include the entire range of scope required to execute the project, including site preparation, mobilization, trial burn, waste excavation, incinerator operation, analytical, ash backfill, support services, project management, demobilization, and site restoration.

It is difficult to point out specific discrepancies in the cost analysis performed by ICF Technology for this site because of the approach utilized to prepare the numbers. However, I think it is safe to say that the current cost (1992 dollars) to execute Alternative S-5 would be no higher than \$300 per ton, or \$46 million. Obviously, this cost compares much more favorably to the \$36.2 million estimated to contain the waste than ICF's estimates.

Ms. Janet Rosati  
U.S. EPA

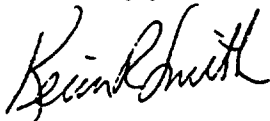
July 28, 1992  
Page 3

It is difficult to debate the political issues relating to utilizing on-site incineration at the Purity Oil site. Perhaps it would be impossible to receive public acceptance for this approach. However, I feel that it is imperative that the decision process be based on cost estimates that reflect current market conditions for each technology being considered.

14

If I can answer any questions related to the data contained in this letter, please feel free to call me at anytime. Thank you again for the opportunity to address this issue.

Sincerely yours.



Kevin R. Smith  
Director of Project Development  
Remediation Projects

**Attachment B**

**TRANSCRIPT OF PUBLIC HEARING**

PURITY OIL SALES

SUPERFUND SITE

COMMUNITY MEETING

-000-

JUNE 22, 1992

7:00 P.M.

-000-

MALAGA COMMUNITY CENTER

3592 SOUTH WINERY

FRESNO, CALIFORNIA

REPORTED BY: DEBORAH E. SCHNEIDER  
RPR, CSR NO. 7650

1 MR. CALERO: I would like to get  
2 started. Please take your seats.

3 Good evening. My name is Norman Calero,  
4 and I am the Community Relations Coordinator.  
5 I'd like to welcome you to the Environmental  
6 Protection Agency Public Meeting to discuss  
7 Purity Oil Sales in the Fresno area.

8 We had expected a greater turnout this  
9 evening. I want to ask up front how many people  
10 are community people, or how many people are  
11 here from out of the area. Are there any?

12 Well, with that in mind, we will be  
13 altering our presentation a little bit. I just  
14 wanted to ask you what kind of information you  
15 are seeking.

16 I guess, basically knowing most of you,  
17 you represent somebody who is linked to the site  
18 as a potentially responsible party. Our  
19 question, I guess, do you want a set  
20 presentation on a lot of information that you  
21 already know?

22 It's information already contained in  
23 the proposed plan and the feasibility studies  
24 we've done, and we can go straight to the  
25 questions and answers.

26 This is a formal comment period and this

1 meeting is being recorded. It is your chance to  
2 go on the record with questions, and also your  
3 chance to go on the record with comments in--  
4 general.

5 So, we do need to go through those two  
6 portions of the question and answers and the  
7 normal comment part of the meeting up front.

8 We are open to whatever you guys feel  
9 you would like us to do. If you don't want us  
10 going through the entire presentation, we can go  
11 straight to and talk about the alternatives in  
12 detail.

13 Is there anybody out there who is not  
14 representing a potentially responsible party?

15 AUDIENCE MEMBER: I'm a student at  
16 Fresno State.

17 MR. CALERO: You are truly our community  
18 member tonight. We can go either way.

19 Janet has put a lot into her  
20 presentation, and we can walk through that, or  
21 if you want to go into questions and answers, we  
22 can do that.

23 It's up to the group. It's more your  
24 meeting than our meeting.

25 How many people want Janet to go through  
26 her presentation?

1 AUDIENCE MEMBER: How long is your  
2 presentation?

3 MS. ROSATI: About a half hour at the  
4 most.

5 MR. CALERO: Is Janet to make a  
6 presentation? May I see a show of hands.  
7 It's unanimous.

8 MS. ROSATI: Can everybody hear me if I  
9 don't use the mike. Some of you are already  
10 familiar with this, so I will go through it  
11 quickly.

12 The site is about a half mile south of  
13 Fresno City limits in the township of Malaga

14 It's a former waste oil recycling  
15 facility operated from 1935 to 1975, and it's  
16 located in an industrial area, and the land  
17 around it is predominantly industrially used.  
18 There are some adjacent residential land uses.

19 Tall Tree Mobile Home Park to the north  
20 and single family residences to the south. The  
21 dark dots that you see on the site were tanks  
22 that have since been removed by EPA.

23 I'll talk more about that in a minute.  
24 To give you a little idea of what we've done so  
25 far, the site was finalized on the National  
26 Priorities List in 1982. That's the list of



1 sites that are eligible for cleanup under the  
2 Superfund.

3 Initially, the State Department of Toxic  
4 Substances Control was lead agency and issued a  
5 Remedial Investigation Report in 1986.

6 EPA then assumed the lead for the site,  
7 and did supplemental soil and groundwater  
8 investigations, and we issued our own remedial  
9 investigation report in October of 1988.

10 We then issued a feasibility study  
11 report in April of 1989, and then we issued a  
12 proposed plan for groundwater and soil in April  
13 of 1989.

14 And the preferred remedy for groundwater  
15 in the proposed plan involved pumping and  
16 treating contamination above ground and then  
17 disposing of it.

18 For soil, the preferred alternative was  
19 to use either solvent extraction or some type of  
20 thermal treatment for soil from 0 to 14 feet.  
21 The exact treatment method would be chosen  
22 pending the results of additional soil testing.

23 They then split the two aspects of the  
24 site, soil and groundwater, and went on and  
25 issued a Record of Decisions for groundwater and  
26 tanks in December 19, 1989.

1           The feasibility study recognized that  
2 soil solidification was available to treat site  
3 waste, but didn't do an indepth analysis of it,  
4 so we did an analysis of soil solidification.

5           We tested four different specific  
6 treatment technologies on the site waste, and  
7 also revised one of the alternatives in the  
8 feasibility study involving soil vapor  
9 extraction, and tonight we are proposing a  
10 slightly different remedy for soil from that  
11 which was discussed in April of 1989.

12           The 1989 proposed plan involves  
13 treatment for soil from 0 to 14 feet, and the  
14 proposed plans before you now does not involve  
15 treatment from 0 to 14 feet.

16           Okay. Before I get into the discussion  
17 of soils, I want to go back a little bit and  
18 talk about groundwater.

19           The flow is to the northwest towards the  
20 City of Fresno. The water table presently is  
21 about 57 feet, and the groundwater is flowing at  
22 a moderate rate of flow of about 50 feet a year.

23           We have done a pretty extensive  
24 investigation of groundwater. The  
25 investigations indicate that the groundwater is  
26 contaminated with volatile organic compounds

1 (VOCs), semi-volatile organic compounds, iron  
2 and manganese.

3 Nine VOC's including trichloroethylene,  
4 1,2-dichloroethane, 1,1-dichloroethane,  
5 1,1-dichloroethene, benzene, vinyl chloride,  
6 carbon tetrachloride, Cis-1, 2-DCE, Trans-1,  
7 2-DCE exceed federal and state drinking water  
8 standards. Iron and manganese exceed federal  
9 standards.

10 The contaminated groundwater plume  
11 extends approximately 2,800 feet northwest of  
12 the site and is 800 feet wide and over 100 feet  
13 deep.

14 No municipal water supplies have been  
15 affected by contaminants from the site; however,  
16 contaminant levels in private wells at 11  
17 properties exceed federal and state drinking  
18 water standards.

19 In March 1992, EPA connected the 11  
20 properties to the City of Fresno or the Malaga  
21 County Water District water systems.

22 There are three components to the  
23 groundwater Record of Decision. One was tank  
24 removal, one was a water supply system, and one  
25 was pumping contaminated groundwater.

26 We removed the tanks, as I mentioned in

1 October of 1991. We connected the downgradient  
2 private well users to either the Malaga County  
3 Water District or City of Fresno water system,  
4 and that was completed in March of this year.

5 We have issued General Notice letters in  
6 April of 1990, and when a General Notice --  
7 Well, you know what special notice letters are.  
8 We issued Special Notice on April 1st of 1991.

9 We were unable to reach an agreement for  
10 the groundwater operable unit and issued an  
11 Order, under Section 106, a Unilateral  
12 Administrative Order on September 30 of 1991.

13 The Order recipients are presently  
14 designing the groundwater pump and treat system,  
15 and the final design is due in the winter of  
16 1993.

17 Soils now. Waste ponds covered a large  
18 portion of the site as you can see from the  
19 historical aerial photographs. About 4 acres  
20 were waste ponds actually from 0 to 14 feet  
21 deep.

22 In June of 1973, Purity Oil began  
23 complying with Superior Court order to empty and  
24 backfill the waste pits. Although the pits were  
25 filled by January of 1975, we have no evidence  
26 that they were emptied. Contaminated soil is

1 from the surface all the way down to about 47  
2 feet. We have had some soil borings that were  
3 contaminated at that depth. --

4 We have done a number of different --  
5 taken a number of different soil samples, about  
6 208 surface soil samples and a number of  
7 subsurface borings.

8 We have found organic and inorganic  
9 contamination. Among the contaminants found  
10 were Benzene which is a carcinogen, and lead  
11 which is highly toxic.

12 The levels range from less than 10 to  
13 100,000 parts per million. Soil from 0 to 14  
14 feet is more contaminated than soil from 14 feet  
15 down to the water table.

16 The waste is also highly acidic. We've  
17 been able to identify about five different  
18 layers of contamination.

19 This is the location of the warehouse  
20 and office, and this is the location of the  
21 former waste pits.

22 The oldest portion of the site from the  
23 photo of 1950 is here, and this is the area of  
24 deepest contamination.

25 Now, I'm going to go through all of the  
26 8 alternatives that are listed in the proposed

1 plan.

2 Alternative #1 is No Action. This is an  
3 alternative that is required by law, and it's  
4 used as a baseline for developing the risk  
5 assessment.

6 In other words, if we don't do anything  
7 at this site, we allow unrestricted access to  
8 contaminated soil, this is what the risk will  
9 be.

10 Alternative #2 is the RCRA Equivalent  
11 Cap. The proposal is to cover the site with a  
12 multi-layer RCRA equivalent cap.

13 RCRA is the Resource Conservation  
14 Recovery Act. Under that act, the statute has  
15 guidelines that describe what the RCRA cap  
16 should be composed of, what the layers should  
17 be, how thick they should be.

18 Alternative #3 is our preferred  
19 alternative. This involves treating soils from  
20 14 to 40 feet with Soil Vapor Extraction. As I  
21 mentioned, Soil Vapor Extraction is a common  
22 component to the rest of the alternatives you  
23 will hear about.

24 I'm going to show you in a few minutes  
25 what Soil Vapor Extraction looks like and  
26 describe how it would work.

1           We would excavate a trench all the way  
2 around the site and fill the trench with  
3 bentonite, which is a clay material and soil to  
4 form a slurry wall.

5           This wall would act as a barrier  
6 surrounding and isolating waste in upper layers  
7 of soil. The slurry wall would extend down 25  
8 feet. We would get layers A and B and part of  
9 C.

10           We would cover the site with the RCRA  
11 cap and then put a retaining wall around the cap  
12 and enclose the North Central Canal.

13           Alternative #4 involves incineration of  
14 the upper 14 feet of soil. We would have to  
15 stabilize or solidify the incineration ash in  
16 order to put it back in the ground because of  
17 the lead that would be in the ash and treat the  
18 soil again from 14 to 40 feet with Soil Vapor  
19 Extraction at this point.

20           We won't need a RCRA cap because much of  
21 the waste would be treated. We would simply put  
22 a soil and clay cap on and cover over the site.

23           Alternative #5, #6 and #7 all deal with  
24 the same kind of treatment which is called  
25 solidification.

26           Basically, what solidification is, is

1 the mixing of contaminated soil with a substance  
2 that turns it into cement. It becomes very  
3 immobile and very stable. --

4 The difference between #5, #6 and #7 --  
5 The only difference is the amount of soil that  
6 we would stabilize or solidify.

7 For Alternative #5, we would propose  
8 solidifying the upper 10 feet of waste or soil,  
9 and then again, Soil Vapor Extraction for the  
10 lower layers and covering the site with a soil  
11 and clay cap.

12 Alternative #7, we would solidify all  
13 areas of soil where the lead concentration was  
14 500 parts per million or greater, and then Soil  
15 Vapor Extraction for the lower layers and then  
16 capping.

17 Alternative #8, we take it somewhere  
18 else, excavate the upper 14 feet, haul it off  
19 site and treat it at an off-site permitted  
20 hazardous waste treatment and disposal facility,  
21 and then treat soils from 14 to 40 feet with  
22 Soil Vapor Extraction and cover the site with a  
23 soil and clay cap.

24 This overhead gives you an idea --  
25 comparative idea of the costs for all of the  
26 alternatives and how long it would take before



1 we were able to say the site was clean.

2 The preferred alternative, as I  
3 mentioned, is Alternative #3, and it has a total  
4 cost of 36 million dollars, and it would take 9  
5 years and 4 months approximately to complete it.

6 It sounds like a long time, but what's  
7 involved there is the operation of the Soil  
8 Vapor Extraction system. The remedy would be  
9 constructed in a much shorter period of time.

10 It would take 80 months for the Soil  
11 Vapor Extraction to work. The least expensive  
12 alternative is capping the site only, and that's  
13 about 24 1/2 million dollars. The most  
14 expensive would be the incineration -- on-site  
15 incineration for the upper 14 feet.

16 Now, as I mentioned, I would show you a  
17 diagram of how Soil Vapor Extraction works.

18 What we are proposing is to treat soil,  
19 as I mentioned, from 14 to 40 feet down to the  
20 water table with Soil Vapor Extraction. What  
21 you see here is a schematic drawing simply  
22 showing contaminated layers of soil.

23 The action of the Soil Vapor Extraction  
24 system would draw volatile organic compounds to  
25 the well.

26 They would be extracted, treated above

1 ground, and by the time they would be released  
2 into the atmosphere, they would be able to meet  
3 air quality standards.

4 We would surround the upper 25 feet of  
5 waste with a slurry wall and put a RCRA cap on  
6 top of that.

7 We tried to draw to scale to see how  
8 high the cap would be. And the cap, as I  
9 mentioned, is composed of different layers.

10 And this gives you an idea of what the  
11 layers are. From top to bottom, the top layer  
12 could be vegetation and then top soil. There's  
13 a layer for water drainage.

14 When it rains, rain water would permeate  
15 through upper layers and would be caught in a  
16 drainage system and be carried off site for  
17 disposal.

18 Rain water shouldn't ever permeate  
19 through the cap into the contaminated soil.  
20 There's an impermeable membrane, and there's  
21 also a gas collection layer where gases that  
22 might build up under the cap from waste that was  
23 left in place that would be vented and treated  
24 and released into the atmosphere.

25 One thing that I wanted to mention-- I  
26 am going to go back to this slide. We've

1 estimated that even though we are not proposing  
2 to actually treat Layers A and B, which is the  
3 top 14 feet of soil, about 25 percent of the  
4 volatile organic compounds in Layers A and B, we  
5 think they will be drawn down into lower layers  
6 by the action of Soil Vapor Extraction and will  
7 be treated, so there will be some treatment of  
8 waste in the upper two layers.

9 Now, where do we go from here. We are  
10 just about in the middle of comment period on  
11 our proposed plan. The comment period began  
12 June 8th, and it ends on July 10.

13 Any comments you have on any of the  
14 alternatives that you have heard about tonight  
15 and read about in the proposed plan, you can  
16 submit to us by July 10.

17 We will then respond to those comments  
18 in a responsive summary and issue a Record of  
19 Decision for soil in September of this year.

20 The Record of Decision will be our final  
21 decision on how we are going to treat the  
22 contaminated soil.

23 And then in the fall of this year, we  
24 will begin enforcement activities and special  
25 notice for design of the soils cleanup remedy.

26 That concludes my presentation. Norman.

1 MR. CALERO: I would like to open it up  
2 for questions and answers if anyone has any  
3 questions. Yes, sir?

4 AUDIENCE MEMBER: How wide is the slurry  
5 wall?

6 MS. ROSATI: It's going to be about two  
7 feet wide -- two feet.

8 MR. CALERO: Any other questions?

9 AUDIENCE MEMBER: I saw the site for the  
10 first time. Is it going to be cleaned up as  
11 part of the millions you are going to spend? Is  
12 it going to be cleaned up? I don't expect  
13 landscaping, but at least nicely cleaned up and  
14 no trash on it?

15 MS. ROSATI: Yeah, it will look a lot  
16 better than it looks right now. A RCRA cap,  
17 like I mentioned, you can put vegetation on top  
18 of the cap. That's not the way it is going to  
19 look like it does now. It is going to look a  
20 lot better than it does now.

21 AUDIENCE MEMBER: What is the square  
22 area that's going to be removed?

23 MS. ROSATI: The site is about 6.8  
24 acres, and we are proposing to cap the whole  
25 thing.

26 AUDIENCE MEMBER: How about the

1 contamination; how far is it out past the  
2 property line?

3 MS. ROSATI: The ground water is --  
4 contaminated 2,800 feet to North Avenue, if you  
5 are familiar with the area. 2,800 feet, and the  
6 soil, as I mentioned, is contaminated beneath  
7 the site all the way down to the water table.

8 AUDIENCE MEMBER: What is the depth of  
9 that?

10 MS. ROSATI: We have samples taken at 46  
11 feet which we did when we did the remedial  
12 investigation. The water table is now about 57  
13 feet.

14 AUDIENCE MEMBER: Does the contamination  
15 fall into the water table now?

16 MS. ROSATI: Yes.

17 AUDIENCE MEMBER: Is that drinking  
18 water?

19 MS. ROSATI: It's not being used for  
20 drinking water.

21 AUDIENCE MEMBER: An excellent  
22 presentation. I was wondering if I'm asking the  
23 right person. Have you done a risk assessment  
24 for the various alternatives?

25 MS. ROSATI: We did a baseline risk  
26 assessment.

1 AUDIENCE MEMBER: What was the baseline?

2 MS. ROSATI: For soil, the surface soil  
3 exceeds the hazardous index for lead, but for  
4 all layers of soil, it's within the acceptable  
5 range of ten to the minus four to ten to the  
6 minus six.

7 Let me add to that a little bit. What  
8 we also did in 1987 and 1988 -- I think it was  
9 in 1987, at that point in time, there was a  
10 reference dose for lead.

11 It's a level at which if you are exposed  
12 to a chemical, there will be some sort of health  
13 impact. A lot of you are aware of what is going  
14 on about lead. There is a health risk from the  
15 site due to lead exposure.

16 AUDIENCE MEMBER: Don't eat the dirt?

17 MS. ROSATI: Don't breathe dust.

18 AUDIENCE MEMBER: Can you give us a  
19 percentage on the toxic material compared to the  
20 impact of soil?

21 MS. ROSATI: I am not sure I follow you.  
22 Your question again?

23 AUDIENCE MEMBER: Sixty percent toxic or  
24 40 for impacted, or is it all a 100 percent  
25 toxic waste area.

26 MS. ROSATI: It's kind of hard to answer

1 that, like for lead for example. EPA recommends  
2 cleaning up the soil so that the concentration  
3 of lead in the soil is 500 to 1,000 parts per  
4 million.

5 The volatile organic components which  
6 are in the soil are making their way filtering  
7 down through the soil and getting into the  
8 groundwater, so that as far as 2,800 feet off  
9 site, 11 of those compounds are exceeding  
10 drinking water standards.

11 In other words, the contamination that  
12 is in the soil is moving down into the  
13 groundwater, and the water is not safe to drink.

14 We've connected those property users to  
15 a water system.

16 MR. CALERO: If you don't have any other  
17 questions, we can start the formal comment  
18 period. Your comments will be made into a  
19 responsive summary, and your comments will be  
20 taken as part of the official record.

21 If you have any comments, please walk up  
22 to the microphone and state your name and  
23 comments.

24 Nobody?

25 Well, I'd like to thank you for coming  
26 to tonight's public meeting. We will be around

1 for awhile if anyone wants to stop and talk.

2 (WHEREUPON, THE PUBLIC HEARING WAS  
3 CONCLUDED AT THE HOUR OF 7:45 P.M.) --

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1  
2 STATE OF CALIFORNIA )  
3 COUNTY OF FRESNO ) ss.  
4  
5  
6

7 CERTIFICATION

8 I hereby certify that the  
9 foregoing is a full, true and correct transcript  
10 of the public hearing taken by me in shorthand  
11 on the date and in the matter described on the  
12 first page hereof.

13   
14 DEBORAH E. SCHNEIDER  
15 Certified Shorthand Reporter  
16  
17  
18

19 Dated: August 5, 1992  
20  
21  
22  
23  
24  
25  
26

# **Appendix B**

## **(ESD)**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
REGION IX  
75 Hawthorne Street  
San Francisco, CA 94105

**MEMORANDUM**

DATE: July 3, 1996

SUBJECT: Explanation of Significant Differences for the Purity Oil Sales Superfund Site

FROM: Nancy Lindsay, H-7

TO: Keith Takata, H-1

*John B. Lee for*

Attached is the Explanation of Significant Differences (ESD) for Purity Oil Sales Superfund Site in Malaga, California. This ESD describes changes to the remedial action that was selected in the 1992 Record of Decision for the Soils Operable Unit (OU2). This ESD is based upon pre-design data which was collected at the site during 1994 and 1995. The results of the pre-design studies along with the recommended conceptual design are documented in the *Pre-Design Summary and Conceptual Design Report*, dated July 1995, by Smith Environmental for the Purity Oil Steering Committee.

In summary, we plan to modify the edges of the RCRA-equivalent closure cover to eliminate the need for a retaining wall. We plan to extend the cover to the rear of the Golden State Market, which is currently adjacent to the site at the northeastern boundary. Gas collected from beneath the closure cover will be monitored, but is not now of either sufficient quantity or concentration to warrant treatment. We also plan to decrease the number of soil vapor extraction wells from 58 to 4, based upon field soil permeability measurements. In addition, because groundwater concentrations appear to have decreased to near MCLs since the extraction and treatment system has been operating, we plan to collect soil vapor data after installation of the cover is complete. This information, combined with groundwater data will help determine the effectiveness of the closure cover in preventing further groundwater contamination.

We plan to issue a fact sheet to the community, informing residents of the planned changes to the selected remedy. We will also hold a public meeting later this month, and may also contact trailer park residents individually. Owners of the additional affected property have already been notified by letter of the actions to be taken.

The changes have been discussed with ORC, CalEPA/DTSC, and the PRPs and no objections to the changes have been received.

Please indicate your concurrence with this ESD by signature on the line provided below.

*Keith A. Takata*  
Keith A. Takata  
Director  
Superfund Division

## **EXPLANATION OF SIGNIFICANT DIFFERENCES FOR THE 1992 RECORD OF DECISION AT THE PURITY OIL SALES SUPERFUND SITE IN FRESNO, CALIFORNIA**

### **Introduction**

The U. S. Environmental Protection Agency (U.S. EPA) is issuing this Explanation of Significant Differences (ESD) for the 1992 Soils Operable Unit Record of Decision for the Purity Oil Sales Superfund Site.

A fact sheet is being sent to community members pursuant to Section 117(c) of CERCLA in order to provide an explanation of significant differences to the remedial action selected in 1992 for the Soils Operable Unit of the Purity Oil Sales site.

### **Background**

The U.S. Environmental Protection Agency and California Environmental Protection Agency Department of Toxic Substances Control maintain oversight authority for the Purity site.

The seven-acre Purity Oil Sales Superfund site is located at 3281 Maple Avenue (at Golden State Blvd.), approximately one-half mile south of the Fresno city limits in the Malaga township. Under the Fresno County General Plan, the Purity site is in a zone designated heavy industrial. The site is located in a mixed-use area and is surrounded by agricultural and industrial land to the west, a metal recycling facility to the north, a residential trailer park and convenience market to the northeast, a propane distributor to the east, a small farm to the southeast, and a used auto parts business to the south.

### **Site history & selected remedy**

Petroleum waste oils were re-refined at the Purity Oil Sales site between 1934 and 1975. These waste oils came from businesses such as service stations, car dealers, truck stops, electrical transformer yards, municipalities, school districts and the military. The oil was re-refined using a number of treatment processes including clarification, chemical addition, acidification, dehydration, distillation, and filtration. The oil and by-products from the refining process were collected and stored in sumps and storage tanks and the process wastes were disposed of on-site in sludge pits.

In 1973, a superior court ordered Purity Oil to empty and backfill the waste pits. The California Regional Water Quality Control Board issued a cleanup and abatement order in 1975 to the owners of the site. No evidence is available to indicate that petroleum waste stored in the pits was ever emptied before the pits were completely filled with construction debris. A fire at the site in 1976 destroyed the main warehouse building and adjacent equipment. The remaining equipment was removed from the site in 1976, and the area was partially regraded. Seven large steel tanks were all that remained of the processing equipment until they were removed by EPA in October 1990. Purity Oil Sales has been a Superfund site since 1982.

U.S. Environmental Protection Agency (EPA) issued a Remedial Investigation Report in 1988 and a Feasibility Study for the Purity Site in 1989. In late 1989, EPA signed a Record of Decision for the extraction and treatment of contaminated groundwater, provision of an alternate water supply, and removal of storage tanks. The tanks were removed from the site in 1990; an alternate water supply was provided to local residents in 1990; and the groundwater treatment system has been operating since November, 1994.

EPA signed a second Record of Decision (ROD) for treatment of contaminated soils on the site in 1992. The components of this decision consisted of the following: 1) construction of a layered cover over the site consistent with landfill closure requirements of the Resource Conservation and Recovery Act (RCRA); 2) soil vapor extraction (between the buried waste layer and the groundwater table) intended to prevent further groundwater contamination; 3) construction of a slurry wall around the perimeter of the site to a depth of twenty-five feet; and 4) lining of the portion of the North Central Canal located adjacent to the site.

This fact sheet explains the differences between what EPA plans to implement based on new site specific information and based on the design specifications for the soils remedy and selected elements of the 1992 ROD. To the extent that this Explanation of Significant Differences differs from the 1992 ROD, this ESD supersedes the ROD.

### **Summary of Remedy Modifications**

Under a 1994 Administrative Order on Consent with EPA, the Purity Oil Sales Steering Committee agreed to prepare the design for the components of the Soils Operable Unit remedial action. Pre-design studies were conducted at the site during 1994 and 1995. The results of the pre-design studies along with the recommended conceptual design are documented in the Pre-Design Summary and Conceptual Design Report, dated July 1995, by Smith Environmental for the Purity Oil Steering Committee. Additional design details are contained in the Pre-final (90%) Design Report: Purity Oil Sales Site: Operable Unit Two (OU-2), dated April 1996 by Smith Environmental for the Purity Oil Steering Committee.

**RCRA-equivalent cap:** The ROD states that the site will be covered with a cap that satisfies RCRA Subtitle C requirements. Pursuant to the ROD, a layered cap with gas and liquid drainage collection systems will be constructed. The ROD also specifies a passive-gas treatment system for gases that may emanate from beneath the closure cover. The treatment system equipment would have consisted of a sulfur dioxide scrubber and carbon adsorption for the VOCs. However, based on pre-design studies it was determined that due to the predominance of low molecular weight hydrocarbons in the gas mixture, carbon adsorption would not be an ineffective treatment.

Since the RI/FS did not include field studies to measure gas generation rates, the steady-state volume of gas that will be passively generated is unclear, but it is believed that it will be far less than the 2,000 cubic feet per minute estimated in the feasibility study. During pre-design a conservative gas generation rate was estimated based on gas generation at municipal landfills. Using this gas generation rate of 8 cfm, coupled with the VOC vapor concentrations from the pre-design studies, indicates that the gas stream composition will not exceed the San Joaquin Valley Unified Air Pollution Control District (SJVUAPCD) allowable emission standards. However, in order for EPA to confirm that gas emissions do not exceed the SJVUAPCD standards, the gas collection system installed as part of the closure system will be monitored quarterly following closure cover installation.

Although EPA does not believe that treatment will be necessary to achieve emission standards, the post-closure emission monitoring would also provide us with data that would allow for proper design and sizing of equipment for a treatment system if treatment ever does become necessary in the future.

The ROD also stated that a retaining wall would surround the closure cover. The need for the retaining wall has been eliminated by re-engineering the slopes at the edges of the cover.

During pre-design studies, contamination was found on privately-owned property beyond the current fence line surrounding the Purity site. The soil samples showed lead concentrations of approximately 10,000 parts per million (ppm) at one foot below ground surface in the rear yard of the Golden State Market. Historical aerial photographs indicate that this property was probably once the site of a waste pit. This property was part of the Purity site until it was sold in 1959. The

Responsiveness Summary prepared for this ROD stated that off-site areas with site-related contamination would also be remediated, consistent with the selected remedy. The rear yard area of the market will have several feet of soil removed and will then be filled and regraded in a manner consistent with the overall site cap.

The southeast 1/2-acre corner of the site is owned by Fresno Recycling Company. The RCRA-equivalent cap will cover the area within the fence line of the Purity site and will include this property.

The cover will meet all landfill closure requirements of both RCRA and California CCR Title 22 Section 67288.

**Soil Vapor Extraction:** The 1992 ROD states that soil vapor extraction wells are to be installed and screened from below the buried waste layer to the water table. Soil vapor extraction was selected to remove volatile organic compounds from the soil in order to protect the groundwater from the threat of further contamination at concentrations exceeding either federal or state drinking water standards.

For the FS, in lieu of actual measurements, an estimate of soil permeability was used to calculate both the radius of influence for a vapor extraction well and the number of wells required to cover the site. The estimates were based on average permeability observed at other petroleum waste sites. The radius of influence was assumed to be 30 feet and the required number of wells calculated from this radius was 58. This assumption represented the shortest radius of influence likely to be encountered at a site of this type where SVE is a viable remedial technology. Actual field measurements demonstrate that the soil is far more permeable than the estimates prepared for the FS and used for the ROD. The radius of influence of each well based on the field data is now calculated to be 150 feet. In addition, the western portion of the site where no pits were located was found to have relatively low (less than 1 ppmv) volatile contaminant concentrations in the soil gas. Such low concentrations present no threat to groundwater and, consequently, require no treatment. By installing soil vapor extraction wells which extend influence over the eastern two-thirds of the site, the number required has been decreased to four.

No modeling was performed during the Remedial Investigation or Feasibility Study to estimate the extent to which soil vapor contributes to groundwater contamination. During the pre-design studies, actual samples of soil vapor were taken during both static and flow conditions. Using this information, modeling was done and the results indicate that current soil vapor concentrations do not significantly affect groundwater contamination. Because modeling can not predict future concentrations precisely, questions remain as to the degree the vapor beneath the buried waste layer contributes to groundwater contamination. After the closure cover is installed and infiltration of surface water through the waste layer stops, we believe that continued contamination of the groundwater from this source will be insignificant. Currently, the concentration of contaminants in the groundwater is fairly low. EPA believes that, prior to full operation of an SVE system, an additional opportunity to evaluate the actual effectiveness of the closure cover in preventing further contamination of the groundwater is prudent.

Although full implementation of SVE may not be necessary once the closure cover is in place, EPA has insisted that the design package currently being produced include the design of the complete soil vapor extraction system. All subsurface piping for the prospective soil vapor extraction system (piping that would be exceedingly difficult to install once the closure cover is in place) will be installed during closure cover construction. Quarterly soil vapor monitoring is proposed to take place for two years following completion of the cover. We believe that two years will allow for sufficient observation of closure cover performance and seasonal effects.

Reevaluation of the data at that time will determine whether final installation and operation of the soil vapor extraction system will be necessary to protect groundwater. This reevaluation is expected to include two-dimensional modeling utilizing the soil vapor data taken both before and

after installation of the closure cover. This model prediction, coupled with the concurrent post-closure-cover groundwater quality data, will allow us to gain a better understanding of the actual effectiveness of the closure cover in protecting the groundwater and help us to draw better conclusions as to the usefulness of SVE at this site.

If the reevaluation clearly indicates that the closure cover is effectively preventing further contamination of the groundwater, then full implementation of the soil vapor extraction system will not be required.

A groundwater pump-and-treat system is currently operating at the site and will continue to operate until the cleanup standards specified in the 1989 groundwater ROD are met.

**Slurry wall:** The ROD states that construction of a slurry wall twenty-five feet deep along the site boundary would be expected to minimize subsurface migration of contaminants. A slurry wall is constructed by filling a trench approximately three feet wide with a mixture of soil, bentonite, and water. A slurry wall is most effective when used to retard the migration of liquids in the saturated zone and when "keyed" or "locked" into an impermeable layer underlying the saturated zone.

Because intermittent clay layers may underlie portions of the site, it was hypothesized that these clay layers could allow perched groundwater to infiltrate either toward or away from the layer of buried contamination. However, results of pre-design moisture sampling of the vadose zone at the perimeter of the site indicated that no perched liquids exist. The current groundwater extraction and treatment system has been successfully treating contaminated groundwater pumped from the aquifer beneath the site since 1994; it will continue to operate until drinking water standards are attained. We now believe that construction of the slurry wall is not necessary to provide protection of human health and the environment.

**Canal lining:** No significant changes to this component of the remedial action are anticipated. The design will accommodate comments and recommendations supplied by the Fresno Irrigation District.

**Five-Year Review:** CERCLA Section 121(c) and the National Contingency Plan require five-year reviews of remedial actions that result in hazardous substances remaining at the site above levels that allow for unlimited use and unrestricted exposure to ensure that the remedy remains protective. EPA guidance also provides that five-year reviews will be conducted for long-term remedial actions where the cleanup levels specified in the ROD will take five or more years to attain. (40 CFR Section 300.430(F)(4)(ii); Structure and Components of Five-Year Reviews, OSWER Directive 9355.7-02, May 23, 1991.)

The five-year review requirement applies to both soils and groundwater operable units at the Purity site.

**Cost of the remedial action:** The 1992 ROD estimated the total cost of the remedial action at approximately \$36 million. This rough estimate represents the present worth of the capital costs plus thirty years of operation and maintenance and was prepared as part of the feasibility study. Estimates were based on a screening-level design effort and were expected to fall within a range from approximately 30% higher to 50% lower. However, as noted above, the feasibility study did not use actual field data to calculate the number of soil vapor extraction wells, resulting in significant over-estimation of cost.

Similar over-estimation occurred with estimates of the sizing of the passive vapor collection system. Cost of the remedial action is currently estimated at approximately \$8 million. The estimate was prepared with approximately 60% of the design detail complete and reflects the changes described above. Because we do not now believe that passive gas collection treatment will be required, the estimate does not include either the costs of the treatment equipment or the long-term operation and maintenance. We believe that this estimate is more accurate because it

is based on actual data taken during pre-design and a more detailed design. Construction costs are expected to be within 20% of the current estimate and if required, estimates for gas treatment will be prepared upon completion of the evaluation described above.

**Opportunity for Public Participation:**

This Explanation of Significant Differences, along with the Pre-Design and 90% Design documents will be placed in the local repository for public review.

The local repository for the Purity Oil Sales Superfund Site is:

Fresno County Central Library  
Government Documents  
2420 Mariposa Street  
Fresno, California 93721  
209/488-3195

Documents will also be maintained at:

U.S. EPA, Region 9  
Superfund Records Center  
95 Hawthorne Street  
San Francisco, California 94105  
415/536-2000

In addition, EPA will conduct a community meeting to discuss this Explanation of Significant Differences with local residents.

**Support agency comments:**

California Environmental Protection Agency/Department of Toxic Substances Control concurs with the above changes to the selected remedy.

**Affirmation of statutory determinations:**

Considering the new information that has been developed and the changes that have been made to the selected remedy, U.S. EPA and CalEPA/DTSC believe that the remedy remains protective of human health and the environment, complies with Federal and State requirements that are applicable or relevant and appropriate to this remedial action, and is cost-effective. In addition, the revised remedy utilizes permanent solutions to the maximum extent practicable for this site.



# **Appendix C**

## **(SOW)**



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105

APPENDIX B

STATEMENT OF WORK

FOR

SOILS OPERABLE UNIT REMEDIAL ACTION

AT

PURITY OIL SUPERFUND SITE

FRESNO, CALIFORNIA

I. PURPOSE

The purpose of this Statement of Work ("SOW") for the Purity Oil Superfund Site ("the Site") is to fully implement the remedial actions selected in the 1992 Record of Decision ("ROD") for the Soils Operable Unit (OU2) and amended in the Explanation of Significant Differences ("ESD") for the Purity

August 28, 1997

Oil Superfund Site, which was signed by the Director of the Superfund Division on July 3, 1996. The Final (100%) Remedial Design ("RD") was approved by EPA on September 5, 1996 pursuant to the Administrative Order on Consent ("AOC") for Remedial Design Operable Unit 2 (Soils) No. 94-04. Settling Work Defendant must implement the remedial design by conducting the remedial action work, in compliance with the ROD, ESD, any applicable EPA guidance, and this Statement of Work ("SOW") for Remedial Action ("RA"). The RA shall also be consistent with the Remedial Design/Remedial Action (RD/RA) Handbook (U.S. EPA Office of Solid Waste and Emergency Response (OSWER) 9355.0-04B, EPA 540/R-95/059, June 1995). The Final(100%) Remedial Design is included (by reference) as an Appendix to this Consent Decree("CD") and shall also be followed in implementing the Remedial Action at the Purity Oil Superfund Site.

## II. DESCRIPTION OF THE REMEDIAL ACTION

Settling Work Defendant shall construct and operate the Remedial Action selected in the ESD and the Soil OU 2 ROD to meet the design criteria, drawings, specifications, Applicable or Relevant and Appropriate Requirements (ARARs),

and other substantive requirements, criteria and limitations set forth in the Final Remedial Design, the ESD, ROD, and this SOW. Settling Work Defendant shall continue to operate the Groundwater Extraction and Treatment system (GET) constructed as part of the Groundwater and Tanks Operable Unit ROD. The Groundwater Technical Memorandums issued since the ROD (which were approved by EPA) are also incorporated into this SOW. Performance Standards for the GET system continue to be defined as the groundwater cleanup standards and design criteria specified in the Groundwater and Tanks OU Record of Decision, Administrative Order for Remedial Design and Remedial Action, U. S. EPA Docket No. 91-28, Final Groundwater Remedial Design, and Final Groundwater Remedial Action Workplan, this SOW and any modifications made by EPA in accordance with the procedures set forth in the NCP. The major components of the Soils Operable Unit remedial action for the Purity Oil Superfund Site which shall be constructed and implemented by Settling Work Defendant are as follows:

1. **Construction, Installation and Operation of a Containment System.**

- A. Landfill Cover**

The Settling Work Defendant shall construct a landfill cover that meets or exceeds the substantive requirements of the Resource Conservation and Recovery Act Subtitle C (40 CFR Part 264, Subpart N) and California CCR Title 22 Section 67288. The purpose of the landfill cover is to prevent direct human contact with waste materials and limit leaching of waste to groundwater. One of the Performance Standards set in the ROD includes prevention of surface water infiltration. The cover must also meet infiltration requirements set forth in CCR Title 22 Section 66265.310. The cover design outlined in the approved RD includes a 2-foot vegetated layer, a geosynthetic drainage and barrier layer, a geosynthetic clay liner, and a 2-foot foundation layer. Settling Work Defendant shall also remove contaminated soil from the rear yard area of the Golden State Market and extend the cover to include this area, which is located at the northeastern boundary of the site. The half-acre property located on the southeast corner of the site (currently owned by Fresno Recycling Company) will also be included within the RCRA-equivalent cap.

The ESD eliminated the construction of a retaining wall around the site. Instead, the perimeter of the closure cover shall be sloped to prevent erosion and promote proper run-off. The Settling Work Defendant shall also construct a passive gas collection layer to prevent the build up of gas beneath the cover system. The Final Remedial Design (Section 2.0) provides a complete summary of the design criteria utilized in designing the cap for the site. A monitoring system shall also be developed to discover whether gas is building up beneath the cover. The feasibility study estimated gas generation rates of 2,000 cubic feet per minute(cfm), and required the construction of a treatment system for the gas. Predesign studies estimated a gas generation rate of 8 cfm, which will not require treatment. The gas collection system shall be monitored quarterly after the cover has been installed to ensure that gas generated will not exceed the San Joaquin Valley Unified Air Pollution Control District's emission standards. The data generated by this system would allow EPA to determine whether or not Settling Work Defendant must design, construct, and

operate a future treatment system for gas being generated.

2. **Installation of subsurface piping and vadose zone monitoring wells** for the contingent operation of a Soil Vapor Extraction system (SVE), which will treat soils from approximately 14 feet below the surface to the water table. The primary purpose of the SVE system is to reduce the mass of volatile organic compounds (VOCs) in the vadose zone from 14 feet to the water table to a level that no longer threatens to contaminate groundwater at levels above the MCLs. The approved Final (100%) Design outlines a phased approach for installation and operation of the SVE system. The overall approach for operating the SVE system includes installation of the subsurface piping, vadose zone monitoring for two years, evaluation of groundwater and soil vapor data by EPA after two years of collecting data, and a subsequent decision by EPA whether or not to operate the system based on the evaluation of the data. As designed, the SVE system consists of the following components: four SVE extraction wells,

underground piping, knockout drum, thermal oxidation unit, and a vacuum pump (Appendix J of RD).

**3. Development of a Monitoring Program for the Vadose Zone**

The Settling Work Defendant shall design a soil gas monitoring program to provide sufficient data with which to evaluate whether or not the soil vapor extraction system should be turned on. During the first two years after the cap implementation soil gas data and groundwater data will be used to evaluate the following; a) increase or decrease in soil gas concentrations that may affect groundwater concentrations above cleanup standards; b) increase or decrease of groundwater contaminant levels based upon partitioning of vapors into the affected groundwater aquifers above cleanup standards; c) the effectiveness of the groundwater extraction system in capturing the horizontal and vertical extent of the contaminant plumes.

**A. Conducting environmental monitoring to ensure the effectiveness of the remedial action.**

The Settling Work Defendant shall conduct



quarterly soil vapor monitoring for two years following completion of the cover. The Settling Work Defendant shall also continue operating the groundwater treatment system until the groundwater cleanup standards (Table 1) are met and conduct quarterly sampling of the groundwater which is outlined in the September 30, 1991 Unilateral Administrative Order (Groundwater OU 1) 91-88 (changes to the monitoring program have been implemented via technical memorandums over the last five years). In addition, EPA may require or Settling Work Defendant may propose adjustments to the soil vapor monitoring frequency or the groundwater extraction system as warranted by the performance monitoring data collected. Proposals submitted by the Settling Work Defendant must be approved by EPA prior to implementation.

Full-scale Operation of the soil vapor extraction system is contingent upon evaluation of data generated over this two year period. The Settling Work Defendant shall submit a report to EPA which evaluates the vapor and groundwater data

generated over this two year period. A modeling program must be used to evaluate this data and the program chosen must have prior approval from EPA.

The Final(100%) Design designates the following wells to be included in the monitoring program: Air Inlet Wells A1-1, A1-2, A1-3, A1-4, A1-5, A1-10, A1-11, A1-21, and A1-22; Air Extraction Wells AE-1, and AE-2; and four new vadose zone Monitoring Wells VM-1, VM-2, VM-3, and VM-4. After evaluating the report and the data, EPA will determine whether full-scale operation of the soil vapor extraction system will be necessary to protect groundwater. Table 3-2 of the 100% Final Design Reports summarizes the volatile organic compounds which will be analyzed in the vadose zone monitoring program.

**5. Canal lining.**

The Settling Work Defendant shall install a concrete/ shotcrete liner along the northern bank of the North Central Canal and enclose the canal within a reinforced concrete pipe. The Settling Work Defendant

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shall also excavate contaminated canal sediments and place them on the site to be included under the landfill cover. The canal will be backfilled as a result of installation of the liner and enclosure of irrigation waters within the reinforced concrete pipe. If visible contamination associated with the Purity site is found on the southern bank of the canal during the installation of the reinforced pipe the Settling Work Defendant shall place the contaminated sediments from this area under the cover. Fresno Irrigation District (FID) has expressed a preference for the enclosure of the canal within a pipeline in lieu of lining the entire canal with concrete. FID has also agreed to design, construct and be responsible for the future operation and maintenance of the pipeline.

6. **Five-Year Review.**

CERCLA Section 121 and the National Contingency Plan require five-year reviews of remedial actions that result in hazardous substances remaining at the site. EPA guidance also provides that five-year reviews will be conducted for long-term remedial actions where the

cleanup levels specified in the ROD will take five or more years to attain. (40 CFR Section 300.430(F)(4)(ii); Structure and Components of Five-Year Reviews, OSWER Directive 9355.7-02, May 23, 1991.) The five-year review requirements applies to both soils and groundwater operable units at the Purity site.

### III. IMPLEMENTATION OF REMEDIAL ACTION

EPA approved the Final Remedial Design (100%) on September 5, 1996. Tasks listed below include remedial action activities to be conducted by Settling Work Defendant. All deliverables submitted as a result of the tasks listed below are subject to EPA approval as outlined in Section XI (paragraphs 33-38) of the CD.

- Task 1      Progress Reporting
- Task 2      Community Relations
  - A.    Temporary Relocation of Residents
- Task 3      Remedial Action Work Plan
- Task 4      Construction Schedule
- Task 5      Health & Safety Plan
  - A. Contingency Plan
- Task 6      Sampling and Analysis Plan

- Task 7 Construction Quality Control Plan
- Task 8 Remedial Action/Construction
- Task 9 Preconstruction Meeting
- Task 10 Construction Reports
- Task 11 Prefinal Inspection
- Task 12 Final Inspection
- Task 13 Operable Unit 2 (Soil) Construction Completion  
Report
- Task 14 Operation and Maintenance
- Task 15 Performance Monitoring

- A. Passive Gas Collection Evaluation Report
- B. Soil Vapor Monitoring Evaluation Report
- C. Groundwater Monitoring Program
- D. Curtailment of Pumping

- Task 16 Five Year Reports

**Task 1 Progress Reporting**

Settling Work Defendant shall submit progress reports summarizing the status of compliance with the provisions of the CD and this SOW on a monthly basis until one year after EPA conducts the final inspection at the site. Monthly reports are due

in the EPA office on the 15th of each month. One year after EPA conducts the final inspection, Settling Work Defendant shall submit progress reports quarterly according to the schedule below. If EPA determines that the SVE system must be operational, Settling Work Defendant shall return to submitting progress reports monthly for the first two years of its operation. During the third year progress reports should be submitted quarterly as defined below.

**Schedule for Submittal of Quarterly Reports**

Quarter:	<u>First</u>	<u>Second</u>	<u>Third</u>	<u>Fourth</u>
Period:	Oct-Dec	Jan-Mar	Apr-Jun	Jul-Sep
Due Date:	Jan 31	Apr 30	Jul 31	Oct 31

The monthly or quarterly report shall include the following:

- i. A summary of work completed since the previous monthly or quarterly report, and all construction work or deliverables projected to be completed by the time of the next monthly or quarterly report;
- ii. Appropriately scaled and labeled maps showing the location of all monitoring wells, extraction

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- wells, and existing structures;
- iii. A summary table showing historical analytical sampling results for both groundwater and vapor data generated;
  - iv. A summary tabulation of volume of extracted groundwater and vapors;
  - v. An estimate of volume or mass of contaminants removed from vadose zone soils and groundwater in the month or quarter and a cumulative tabulation of the total volume or mass of contaminant removed (total and lbs/day);
  - vi. Identification of potential problems which will cause or threaten to cause noncompliance with the CD and what actions are being taken or planned to prevent these obstacles from resulting in noncompliance with the CD, and
  - vii. In the event of noncompliance with the provisions of the CD, the report shall include written explanation of the events which led to the noncompliance and proposed actions and schedule to achieve compliance.

**Task 2**

**Community Relations**

The Settling Work Defendant shall appoint/hire a community relations specialist. The person must have community involvement experience and be versed in handling a variety of community relations activities. The Settling Work Defendant must have access to a translator capable of interfacing with the Spanish speaking community that is located near this site.

The Settling Work Defendant shall prepare a Community Relations Plan("CRP") which summarizes the following activities: community relations strategy, planned meetings and interviews with residents, interview questionnaire, evaluation of possible temporary relocation sites, evaluation of possible temporary relocation of impacted residents living in Tall Tree Mobile Home Park, letters to community members, planned public meetings and preparation/ mailing of fact sheets. The Settling Work Defendant's community relations specialist shall coordinate with the EPA project manager and EPA Community Relations Coordinator in



drafting the CRP. Upon approval of the CRP, EPA and the Settling Work Defendant shall meet and confer within 30 days regarding the implementation of all or part of the CRP.

If temporary relocation of Tall Tree Mobile Home Park residents is required by EPA, the Settling Work Defendant shall also be responsible for all logistics associated with finding residents temporary housing and paying for the costs of temporary housing. Although EPA will prepare all Fact Sheets and public notices sent to the community, the Settling Work Defendant will be responsible for printing and distributing EPA's final version to the community. The Settling Work Defendant shall place EPA generated public notices in a local paper designated by EPA. Settling Work Defendant shall be responsible for providing EPA with all visual aids needed so that EPA can conduct public meetings. Settling Work Defendant shall also send copies of all final deliverables listed in Section IV to the information repository.

**Completion Date:** The draft Community Relations Plan shall be submitted to EPA for approval no later than 60 days after EPA approval of the Supervising Contractor. The Final document shall be submitted 30 days after EPA provides comments.

**Task 3 Remedial Action Work Plan**

The Remedial Action Work Plan submitted shall be in accordance with Section XI and paragraph 11 of the Consent Decree. The Remedial Action Work Plan shall include a detailed description of the remediation and construction activities as detailed in the approved Final Design. The Remedial Action Work Plan shall include a project schedule for each major activity and submission of deliverables generated during the Remedial Action. Settling Work Defendant shall also submit with the Draft Remedial Action Workplan the following documents: Draft Health and Safety Plan, Draft Sampling and Analysis Plan and Draft Construction Quality Assurance Project Plan.

### **Site Security**

Settling Work Defendant shall provide a Site Security Plan for the on-site construction phase of the project. This plan shall be included as a section in the Remedial Action Work Plan.

### **EPA approval of Construction Manager**

EPA reserves the right to approve/disapprove the Supervising Contractor(Construction Manager) as summarized in Section VI Performance of the Work by Settling Work Defendant paragraph (9) of the CD. The Settling Work Defendant shall submit within 10 days of lodging of the CD, the resumes of personnel including the Construction Manager and other members on the team.

**COMPLETION DATE:** Settling Work Defendant shall submit to EPA a draft Remedial Action Work Plan no later than 60 days after EPA approval of the Supervising Contractor. The Final Remedial Action Work Plan is due within 30 days after receiving EPA comments.

#### **Task 4**

#### **Construction Schedule**

Settling Work Defendant shall submit a schedule of all planned RA activities to EPA as an attachment to the monthly progress report. This schedule is also included as Section 8 of the Remedial Action Work Plan. Revisions to the Construction Schedule are subject to EPA approval. Once the on-site construction phase of the project begins, the construction schedule should be updated/revised as needed and submitted weekly to EPA with the Daily Construction Reports (Task 10).

**COMPLETION DATE:** Settling Work Defendant shall submit the Construction Schedule to EPA as follows: 1) an attachment to the monthly progress reports starting from date of entry of the CD; 2) submitted with the draft and final Remedial Action Work Plan; 3) submitted Weekly during construction phase of the project.

**Task 5**

**Health and Safety Plan**

Settling Work Defendant shall submit a Health and Safety Plan consistent with EPA guidance. All personnel working on the site are required to meet OSHA 40-hour safety training. The Health and Safety Plan shall specify protective equipment to be used, specify standard operating procedures, and include a contingency plan (see 5A) in accordance with 20 CFR 1910.120 1(1) and (1)(2) and 40 CFR 300.150 of the NCP. The Health and Safety Plan shall address all response activities planned at the Site during the remedial action and shall be revised during the O&M phase to outline health and safety issues associated with the long term operation and maintenance phases of the project.

**COMPLETION DATE:** The draft Health and Safety Plan shall be due to EPA within (60) days of EPA approval of the Supervising Contractor. The Final Health and Safety Plan for the RA phase of the project shall be submitted 30

days after receiving EPA comments. The Revised Health and Safety Plan shall be due with the Final Operation and Maintenance Plan.

**Task 5A**

**Contingency Plan [Stand alone or in H & S]**

Settling Work Defendant shall submit a Contingency Plan describing procedures to be used in the event of an accident or emergency at the site. The Contingency Plan shall include, at a minimum, the following:

1. Name of the person or entity responsible for notifying appropriate medical personnel and local emergency squads in the event of an emergency incident.
2. Plan and date(s) for meeting(s) with the local community, including local, State and Federal agencies involved in the cleanup, as well as local emergency squads and hospitals.
3. First aid medical information.
4. Air Monitoring Plan.
5. Spill Prevention, Control, and

Countermeasures (SPCC) Plan (if applicable), as specified in 40 CFR Part 109, describing measures to prevent and contingency plans for potential spills and discharges from materials handling and transportation.

**COMPLETION DATE:** The draft Contingency Plan shall be due within (60) days of EPA approval of the Supervising Contractor. The final Contingency Plan shall be submitted no later than 30 days prior to the start of construction, or in accordance with the approved construction schedule.

**Task 6      Sampling And Analysis Plan**

Settling Work Defendant shall submit a Sampling and Analysis Plan which details the sampling to be conducted for the closure cover system, soil vapor extraction system, vadose zone monitoring program, and passive gas collection system. EPA approved a Table of Contents for the Sampling and Analysis Plan in Appendix I of the Final (100%) Design. The Sampling and

Analysis Plan shall be consistent with the Appendix I Table of Contents and the following EPA guidance documents: *Preparation of a U.S. EPA Region 9 Field Sampling Plan for Private and State-Lead Superfund Projects* (Document Control No. 9QA-06-93), *Guidance for the Data Quality Objectives Process* (EPA QA/G-4, Final - September 1994); *Data Quality Objectives Process for Superfund* (EPA/540/G-93/071, September 1993); and *EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations* (EPA QA/R-5 August 1994).

**COMPLETION DATE:** The draft Sampling and Analysis Plan shall be due within (60) days of EPA approval of the Supervising Contractor. The Final Sampling and Analysis Plan shall be submitted no later than 45 days after receipt of EPA comments on the draft document.

**Task 7 Construction Quality Control Plan**

Settling Work Defendant shall submit a Construction Quality Control Plan (CQCP) which describes the Site specific components of the quality



assurance program which shall ensure that the completed project meets or exceeds all design criteria, plans, and specifications. The draft document submitted shall follow the EPA approved Table of Contents submitted in Appendix I of the Final (100%) Design. The CQCP shall also contain, at a minimum, the following elements:

1. Responsibilities and authorities of all organizations and key personnel involved in the construction of the Remedial Action.
2. Qualifications of the designated Quality Assurance Official to demonstrate he/she possesses the training and experience necessary to fulfill his/her identified responsibilities.
3. Protocols for sampling and testing used to monitor construction.
4. Identification of proposed quality assurance sampling activities including the sample size, locations, frequency of testing, acceptance and rejection data sheets, problem identification and corrective measures reports, evaluation reports, acceptance

reports, and final documentation. A description of the provisions for final storage of all records consistent with the requirements of the Work Plan shall be included.

5. Reporting requirements for construction activities shall be described in detail in the construction quality control plan. This shall include such items as daily summary reports, inspection data sheets, problem identification and corrective measures reports, design acceptance reports, and final documentation. Provisions for the final storage of all records shall be presented in the CQCP.

**COMPLETION DATE:** The draft CQCP shall be submitted no later than 60 days after EPA approval of the Supervising Contractor. The final CQCP shall be submitted no later than 45 days after receipt of EPA comments on the draft document.

**Task 8 Remedial Action Construction**

The Settling Work Defendant shall implement the Remedial Action as detailed in the approved Final Design. After approval of the Final Remedial Action Workplan, EPA shall issue a Notice to Proceed with construction. Settling Work Defendant will have 30 days to award the RA contract. Construction shall commence no later than 60 days after EPA issuance of the Notice to Proceed or the receipt of settlement funds by the Settling Work Defendant, whichever is later; Settling Work Defendant shall also agree to commence discussions with Fresno Irrigation District such that canal enclosure by FID will start during the FID's 97/98 construction season. EPA acknowledges that commencement of construction is subject to changes.

**Task 9 Preconstruction inspection and meeting:**

Settling Work Defendant shall participate with the U.S. EPA , the State, construction contractor, and sub-contractors as appropriate in

a. preconstruction inspection and meeting to:

- a. Review methods for documenting and reporting inspection data;
- b. Review methods for distributing and storing documents and reports;
- c. Review work area security and safety protocol;
- d. Discuss issues associated with temporary relocation of residents living at the Tall Tree Mobile Home Park.
- e. Discuss any appropriate modifications of the construction quality assurance project plan to ensure that site-specific considerations are addressed; and
- f. Conduct a Site walk-around to verify that the design criteria, design drawings, and specifications are understood and to review material and equipment storage locations.

Settling Work Defendant shall submit to EPA an appendix to the RA Work Plan which contains the qualifications of all contracting and sub-contracting

personnel working on the site. Settling Work Defendant shall also submit to EPA an updated phone list of all Remedial Action contractors and subcontractors at this meeting. The preconstruction inspection and meeting shall be documented by a designated person (to be determined at the meeting) and minutes shall be transmitted to all parties.

**COMPLETION DATE:** The pre-construction inspection and meeting shall occur 15 days after Settling Work Defendant awards the RA Contract or fifteen days before Settling Work Defendant initiates construction of the RA.

**Task 10 CONSTRUCTION REPORTS**

**A. Daily Construction Reports**

Daily construction reports shall be prepared by the construction site manager describing daily activities, problems encountered, and actions taken to resolve problems. If a change order effects the scope of the remedy, the construction reports should include a discussion of any change

orders initiated by the Settling Work Defendant's contractor. The daily reports shall be accumulated for one week and submitted to EPA.

**B. Weekly Construction Reports**

The Settling Work Defendant should schedule weekly meetings at the site to discuss the progress of construction activities and any field changes requiring EPA prior approval. A sample agenda for the Weekly Construction Meeting is attached as Figure 1.

**C. Change Orders**

Prior approval by EPA is required for any changes in work that effect the scope of the project which was approved by EPA in the Final Remedial Action Plan. Informal discussions of the changes can occur at the weekly meetings. Formal approval from EPA will require a letter from the Settling Work Defendant describing the change required and justification for the change. EPA will give a verbal approval of the change in the

field (when appropriate) and follow-up with a memo documenting EPA approval.

**Task 11**

**Pre-final Inspection:**

Within 10 days (Section XIV. Certification of Completion of the CD discusses the pre-certification prior to site completion) after Settling Work Defendant makes a preliminary determination that construction is complete, Settling Work Defendant shall notify EPA and the State for the purposes of conducting a pre-final inspection. The pre-final inspection shall consist of a walk-through inspection of the entire facility with EPA and the State. The inspection is to determine whether the project is complete and consistent with the design documents and the approved Final Remedial Action Workplan. Any outstanding construction items discovered during the inspection shall be identified and noted. The pre-final inspection report shall outline the outstanding construction items, actions required to resolve items, completion date for these items,

and a proposed date for final inspection.

**Completion Date:** Pre-final Report/Letter is due ten days after attending the inspection.

**Task 12**

**Final inspection:**

Within 10 days after completion of all work identified in the pre-final inspection report, Settling Work Defendant shall notify the EPA and the State for the purposes of conducting a final inspection. The final inspection shall consist of a walk-through inspection of the facility by EPA, the State, Settling Work Defendant and the Construction Manager. The pre-final inspection report shall be used as a checklist with the final inspection focusing on the outstanding construction items identified in the pre-final inspection. Settling Work Defendant shall confirm to EPA in writing that outstanding items have been resolved and that they have completed the construction in compliance with all relevant documents.



Completion Date: The Final Inspection  
Report/Letter is due no later than 10 days  
after final inspection has occurred.

**Task 13      Operable Unit 2 (Soils) Completion Report**

Settling Work Defendant shall submit a Draft  
OU 2 Construction Completion Report documenting  
and certifying the completion of the necessary  
activities for achieving the requirements of  
Section II of this SOW. The report shall document  
that the soil operable unit construction was  
completed in accordance with the design  
specifications. The report shall include  
documentation to EPA that outstanding items noted  
during the final inspection have been resolved.

Settling Work Defendant shall also provide to  
EPA in writing a certification from appropriate  
registered professional engineers, and from  
Settling Work Defendant's Project Coordinator,  
that the Remedial Action for the Soil Operable  
Units was constructed in accordance with the

remediation drawings and specifications approved by EPA. The Report shall also include Record drawings signed and stamped by the appropriate registered professional engineer. The report shall contain the following statement, signed by Settling Work Defendant, and by a professional engineer:

"To the best of my knowledge, after thorough investigation, I certify that the information contained in or accompanying this submission is true, accurate and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations."

**COMPLETION DATE:** (i) The draft Final OU 2 Construction Completion Report shall be due within sixty (60) days following the final inspection. The Final OU 2 Construction Completion Report shall be due 30 days after receiving EPA comments on the draft document.

#### **Task 14    Final Operation and Maintenance Plan**

The Draft Operation and Maintenance Plan is included in the approved Final (100%) Design Report for the Soils Operable Unit. Settling Work Defendant shall submit a Final Operation and Maintenance Plan to cover the a) closure cover system; b) soil vapor extraction system (piping only and/or full-scale system); c) passive gas collection system; and d) long term operation and maintenance of the groundwater extraction and treatment system. This plan shall include the following elements:

1. Description of normal operation and maintenance;
  - a. Description of tasks for operation;
  - b. Description of tasks for maintenance;
  - c. Description of prescribed treatment or operation conditions; and
  - d. Schedule showing frequency of each O&M task.
  - e. Description of permits obtained.
2. Description of routine monitoring and laboratory testing required for the SVE system, passive gas treatment system and groundwater system;

- a. Description of monitoring tasks;
  - b. Description of required data collection, laboratory tests and their interpretation;
  - c. Required quality assurance, and quality control (see Task 6 for appropriate EPA guidance documents and discuss with EPA project manager prior to writing to obtain current guidance documents);
  - d. Schedule of monitoring frequency and procedures for a petition to EPA to reduce the frequency of or discontinue monitoring; and
  - e. Description of discharge requirements.
3. Description of alternate O&M;
- a. Should systems fail, alternate procedures to prevent release or threatened releases of hazardous substances, pollutants or contaminants which may endanger public health and the environment or exceed performance standards; and
  - b. Analysis of vulnerability and additional resource requirement should a failure occur.

4. Corrective Action;
  - a. Description of corrective action to be implemented in the event that discharge standards are exceeded; and
  - b. Schedule for implementing these corrective actions..
5. Safety plan;
  - a. Description of precautions, of necessary equipment, etc., for Site personnel; and
  - b. Safety tasks required in event of systems failure.
6. Description of equipment; and
  - a. Equipment identification;
  - b. Installation of monitoring components;
  - c. Maintenance of Site equipment; and
  - d. Replacement schedule for equipment and installed components.
7. Records and reporting mechanisms required.
  - a. Daily operating logs;
  - b. Laboratory records;
  - c. Records for operating costs;
  - d. Mechanism for reporting emergencies;

- e. Personnel and maintenance records; and
- f. Monthly/annual reports to State agencies.

**COMPLETION DATE:** The Operation and Maintenance Plan shall be due 60 days after EPA conducts the final site inspection.

**Task 15 Performance Monitoring**

- A. Performance Standards Assessment Plan - evaluates effectiveness of SVE System and Groundwater Extraction and Treatment (GET) System

The Settling Work Defendant shall submit a report for EPA approval which evaluates the soil vapor data generated during the first two years after the cap was placed on the site. The plan shall provide an estimate of the capture zone of the air inlet and air extraction wells; use computer modeling (program requires prior EPA approval) to evaluate soil vapor data generated; evaluate the effectiveness of the final GET system. The evaluation shall also include, but not be limited to, an estimation of the capture

zone of the extraction wells, establishment of the cones of depression by field measurements, and presentation of chemical monitoring data. A map shall be included that superimposes the capture zone on the pollutant plume for all affected aquifer zones. Specific modifications to the system and an implementation time schedule shall be proposed in the event that the system is demonstrated to be ineffective in containing and removing the contaminants.

**COMPLETION DATE:** The Performance Standards Assessment Plan which will evaluate the soil vapor monitoring data and the GET system shall be submitted 27 months after EPA conducts the final inspection (Task 12).

**Task 15B Groundwater Monitoring Program**

As outlined in the SOW of the Unilateral Order for the Groundwater Remedial Design and Remedial Action, the Settling Work Defendant shall continue to conduct the groundwater monitoring program (GMP). The Settling Work

Defendant shall continue to sample groundwater for the Hazardous Substances List of Organics and Inorganics on a quarterly basis (unless EPA has approved Technical Memorandums which modify the GMP) to track progress towards compliance with the Performance Standards which include ROD cleanup goals. The Settling Work Defendant shall continue to conduct the GMP for five (5) years after the cessation of the GET System or the SVE System. If after five (5) years, neither the GET System nor the SVE System is reactivated, then the GMP will be discontinued.

**TASK 15C Proposal for Cessation of the GET System or the SVE System**

The Settling Work Defendant shall continue to operate the GET System or the SVE System until all wells exhibit contaminant concentrations at or below the Performance Standards. If the GMP data show Performance Standards have been achieved, the Settling Work Defendant may suspend the operation of the GET System or the SVE System. However the GMP identified



in Task 15B above must continue for five (5) years. If the GMP data shows that the Performance Standards have not been achieved, the Settling Work Defendant shall reactivate the GET System or SVE System. The groundwater cleanup standards are listed in Table 1.

The Settling Work Defendant may submit a report to EPA containing a proposal for turning off the GET System or the SVE System at the Site and the criteria used to justify cessation of treatment. The reports shall include data to show that contaminant levels have stabilized or are stabilizing at or below the Performance Standards, and that the potential for contaminant levels rising above Performance Standards is minimal. This proposal shall include a proposal for a GMP that is capable of verifying the maintenance of Performance Standard in the aquifers, and a plan for reactivating the GET System or SVE System if the GMP reveals that contaminant levels rise above Performance Standards. This report shall also include an evaluation of the potential for contaminants to migrate downwards from the affected aquifers to deeper water-bearing units.

Additionally, when the Settling Work Defendant has

concluded that all the Performance Standards have been met, Settling Work Defendant may pursue EPA certification pursuant to Section XVIII (Certification of Completion). Once EPA reviews and approves the plan described in this Task the Settling Work Defendant may cease operating the GET System or the SVE System.

**Completion DATE:** When the Settling Work Defendant determines that cessation of the GET System or the SVE System is appropriate and EPA approves the Cessation Plan.

**Task 15D Cessation of the GET System or the SVE System**

The Settling Work Defendant shall implement Task 15C above as approved by EPA and submit a report to EPA documenting completion of all tasks approved by EPA in the Proposal for Cessation of the GET System or SVE Systems submitted under Task 15C above.

**Completion DATE:** A report documenting the cessation of the GET System or the SVE System shall be due within (30) days after cessation of the GET System or the SVE System as approved by EPA.

## **Task 16    Five-Year Status Reports**

Settling Work Defendant shall submit a Status report every five years to EPA. This status report shall evaluate the effectiveness of the cap in limiting contact with contaminated soils; evaluate the effectiveness of the groundwater treatment system; and evaluate the soil vapor extraction system. If maintenance and/or repair is needed, the tasks and time schedule necessary to implement such work shall be included in the report.

**COMPLETION DATE:** Every five years after the date on-site construction begins.

#### IV. SUBMISSION SUMMARY

This summary presents the information reporting requirements contained in the Settling Defendants RA Scope of Work.

<u>Task</u>	<u>Submission</u>	<u>Due Date</u>
	Selection of Supervising Contractor	Within 10 days after CD lodging, Settling Work Defendant shall notify EPA and the State in writing the proposed Contractor (see paragraph VI of CD)
Task 1	Progress Reports	On the schedule described under Section 3, Task 1.
Task 2	Draft Community Relations Plan	Within 60 days after EPA approves the Supervising Contractor
	Final Community Relations Plan	30 days after receiving EPA comments.
Task 3	Remedial Action Work Plan	Within 60 days after EPA approves the Supervising Contractor.
	Final Remedial Action Work Plan	Within 30 days after receiving EPA comments.
Task 4	Construction Schedule	Attachment to Task 1, Appendix to Task 3, and Weekly during construction.
Task 5	Draft Health and Safety Plan	Within 60 days after EPA approves the Supervising Contractor.

	Final Health and Safety Plan	30 days after receiving EPA comments.
Task 5A	Draft Contingency Plan	Within 60 days after EPA approves the Supervising Contractor.
Task 5A	Final Contingency Plan	Within 30 days prior to the start of construction.
Task 6	Draft Sampling and Analysis Plan	Within 60 days after EPA approves the Supervising Contractor.
	Final Sampling and Analysis Plan	45 days after receiving EPA comments.
Task 7	Draft Construction Quality Control Plan	Within 60 days after EPA approves the Supervising Contractor.
	Final Construction Quality Control Plan	45 days after receiving EPA comments.
Task 8	Notice to Proceed	EPA will issue within 10 days of approving Task 3 document.
	Award RA Contract(s)	30 days after receiving Notice to Proceed.
Task 9	Pre-Construction Inspection	Fifteen days prior to the start of construction or 15 days after contract Award.

	Initiate Construction of Remedial Action	Within 60 days after receipt of EPA's Notice to Proceed or receipt of settlement funds by Settling Work Defendant whichever is later.
Task 10	Construction Reports	Daily and submitted to EPA weekly.
	Weekly Construction Meetings	Schedule with EPA weekly.
	Change Orders	Letters submitted to EPA as needed. EPA will respond as soon as possible.
Task 11	Pre-final Inspection	No later than 10 days after completion of construction.
	Pre-final Inspection Report	Ten days after completion of pre-final inspection.
Task 12	Notice of Final Inspection	Within 10 days after completing work identified in the Pre-final Inspection
	Final Inspection Report	Within 10 days after Final Inspection has occurred.
Task 13	Draft Operable Unit 2 (Soils) Completion Report	Within 60 days of completing OU 2 construction activities.
	Final Operable Unit 2 (Soils) Completion Report	30 days after receiving EPA comments.
Task 14	Final Operation and Maintenance Plan	60 days after EPA conducts the final site

inspection.

Task 15      Performance Standards  
                 Assessment Plan

27 months after EPA  
conducts the final site  
inspection.

Task 16      Five-year Status Report

Every five years after  
initiation of  
construction (Task 9B).



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105

Table 1

Groundwater Cleanup Standards

<u>Contaminant</u>	<u>Standard (ppb)</u>
Benzene.....	1
Carbon Tetrachloride.....	0.5
cis-1,2-Dichloroethene.....	6
1,1-Dichloroethane.....	5
1,2-Dichloroethane.....	0.5
1,1-Dichloroethene.....	6
Iron .....	300
Manganese.....	50
Trichloroethylene.....	5
Trans-1,2-Dichloroethene.....	10
Vinyl Chloride.....	0.5





UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105

SAMPLE AGENDA FOR REMEDIAL ACTION WEEKLY MEETINGS

REMEDIAL ACTION WEEKLY PROGRESS MEETING

DATE: 15 JANUARY 1997

1. ATTENDEES
2. PREVIOUS WEEK'S ACTIVITIES
3. CONTRACTOR'S PERFORMANCE & QUALITY
4. CURRENT WEEK PLANNED ACTIVITIES
5. PERSONNEL & EQUIPMENT TO BE USED THIS WEEK
6. OVERALL PROJECT SCHEDULE AND CHANGES
7. POTENTIAL CONSTRUCTION PROBLEMS
8. INSPECTION/TESTING PROCEDURES
9. METHODS FOR DOCUMENTING AND REPORTING INSPECTION DATA
10. WORK AREA SECURITY & SAFETY
11. SUBMITTAL REQUIREMENTS



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION IX

75 Hawthorne Street

San Francisco, CA 94105

REFERENCES

U. S. EPA, *Explanation of Significant Differences for Purity Oil Sales Superfund Site*, July 3, 1996.

Smith Environmental, *Final (100%) Design Report, Purity Oil Sales Site, Operable Unit Two (OU-2)*, Volume I & II, June 1996.

Smith Environmental, *Pre-Final (90%) Design Report, Purity Oil Sales Site, Operable Unit Two (OU-2)*, Volume I & II, April 1996.

*Remedial Design/Remedial Action Handbook*, U.S. EPA, Office of Solid Waste and Emergency Response (OSWER), 9355.0-04B, EPA 540/R-95/059, June 1995

U.S. EPA, *Guidance for the Data Quality Objectives Process*, EPA QA/G-4, Final, September 1994.

U.S. EPA, *EPA Requirements for Quality Assurance Project Plans for Environmental Data Operations*, EPA QA/R-5, August 1994.

U.S. EPA, *Administrative Consent Order for Remedial Design, Operable Unit 2 (Soils)*, U.S. EPA Docket No. 94-04, January 6, 1994.

U.S. EPA, *Data Quality Objectives Process for Superfund, Interim Final Guidance*, EPA/540/G-93/071, Publication 9355.9-01, September 1993.

U.S. EPA, *Preparation of a U.S. EPA Region 9 Field Sampling Plan for Private and State-Lead Superfund Projects*, Document Control No. 9QA-06-93, August 1993.

August 28, 1997

U.S. EPA, *Record of Decision for the Purity Oil Sales, Inc., Superfund Site, Soils Operable Unit*, September 30, 1992.

U. S. EPA, *Administrative Order for Remedial Design and Remedial Action*, U.S. EPA Docket No. 91-28, September 30, 1991.

U.S. EPA, *Administrative Order for Remedial Design and Remedial Action Amendment*, October 31, 1991.

U.S. EPA, *Guidance on EPA Oversight of Remedial Designs and Remedial Actions Performed by Potential Responsible Parties*, U.S. EPA Office of Emergency and Remedial Response, EPA/540/G-90/001, April 1990.

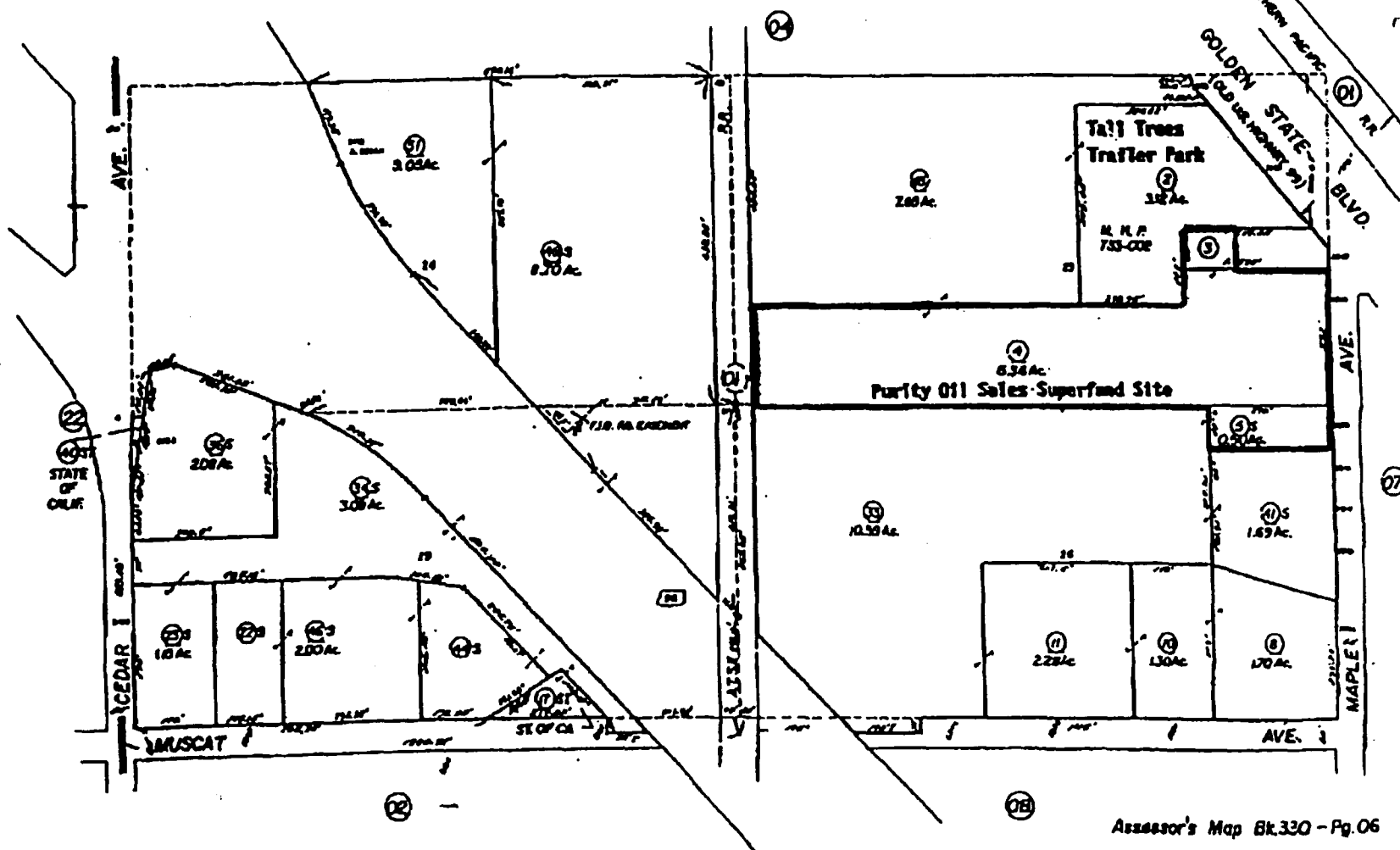
U.S. EPA, *Record of Decision for the Purity Oil Sales, Inc., Superfund Site, Groundwater and Tanks Operable Unit*, September 26, 1989

Standards for the Construction Industry, Code of Federal Regulations, Title 29, Part 1926, Occupational Health and Safety Administration.

Standards for General Industry, Code of Federal Regulations, Title 29, Part 1910, Occupational Health and Safety Administration.

# **Appendix D**

## **(Site Map)**



**Malaga Tract, Tract No. 1795 - Plat Bk. 2, Pg. 17**

**NOTE - Assessor's Block Numbers Shown in Ellipses.  
Assessor's Parcel Numbers Shown in Circles**

Assessor's Map Blk.330 - Pg.06  
County of Fresno, Calif.

# **Appendix E**

## **(UAO and related SOWs)**

**UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
Region IX**

In The Matter Of:

The Purity Oil Sales Superfund Site  
Fresno, California

Chevron Corporation  
Unocal Corporation  
Phillips Petroleum Company  
Pacific Gas & Electric Company, Inc.  
Southern Pacific Transportation Company  
California Department of Transportation  
Morrison-Knudsen Engineers, Inc.  
Foster Poultry Farms  
Cummins West, Inc.

U.S. EPA  
Docket No.91-28

Respondents

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Proceeding Under Section 106(a) of the  
Comprehensive Environmental Response,  
Compensation, and Liability Act of 1980,  
as amended (42 U.S.C. § 9606(a))

**ADMINISTRATIVE ORDER  
FOR REMEDIAL DESIGN AND REMEDIAL ACTION**

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4 This Administrative Order directs the above-captioned  
5 Respondents ("the Respondents") to perform the remedial design  
6 for groundwater extraction, treatment and reinjection as  
7 described in the Record of Decision for the Purity Oil Sales Site  
8 ("the Site"), dated September 26, 1989, and to implement the  
9 design by performing a remedial action. Work required under this  
10 Order is further defined in Section IX (Work To Be Performed).  
11 This Order is issued to each Respondent by the United States  
12 Environmental Protection Agency ("EPA") under the authority  
13 vested in the President of the United States by Section 106(a) of  
14 the Comprehensive Environmental Response, Compensation, and  
15 Liability Act of 1980, as amended ("CERCLA"), 42 U.S.C.  
16 § 9606(a). This authority was delegated to the Administrator of  
17 EPA on January 23, 1987, by Executive Order 12580 (52 Fed. Reg.  
18 2926, January 29, 1987), and was further delegated to EPA  
19 Regional Administrators on September 13, 1987 by EPA Delegation  
20 No. 14-14-B.

22 | A. Site Description

23 1. The seven-acre Purity Oil Sales site is located  
24 approximately one-half mile south of the Fresno city limits, in  
25 the township of Malaga. The site is located in a mixed-use area  
26 and is surrounded by agricultural and industrial land on the  
27 west, small businesses to the north, a residential trailer park  
28 and market on the northeast, and a small farm on the southeast.

1        2. About one-half mile to the west and southwest of the  
2 site are fields of oats, alfalfa, cotton, fruit trees, and  
3 grapes.

4        3. The Purity Oil site is located in the San Joaquin River  
5 drainage basin. The San Joaquin River is approximately 12 miles  
6 north of the Purity site. Several irrigation canals are located  
7 in the region, including the North Central Canal along the  
8 southern site boundary.

9        4. The groundwater aquifer in the Fresno area has been  
10 designated as a sole-source aquifer by EPA under the Safe  
11 Drinking Water Act. The Fresno sole-source aquifer includes the  
12 Purity site within its boundaries.

13       5. The aquifer in the vicinity of the site is unconfined to  
14 depths of several hundred feet. Because there is no confining  
15 clay zone layer to restrict vertical groundwater flow, the  
16 shallow aquifer underlying the Purity site is probably  
17 hydrogeologically connected with deeper aquifer zones which  
18 provide domestic water supply for the City of Fresno and the  
19 surrounding area. Depth to groundwater at the site is between 40  
20 and 50 feet. The present direction of groundwater flow is towards  
21 Fresno (the northwest).

22       6. Petroleum waste oils were re-refined at the site from  
23 1934 to the early 1970's. The waste oil was often mixed with  
24 solvents. These waste oils and solvents came from businesses  
25 such as service stations, car dealers, truck stops, electrical  
26 transformer yards, and military facilities. The used oil was re-  
27 refined using a number of treatment processes including  
28 clarification, chemical addition, dehydration, distillation, and

1 filtration. The oil and by-products from the refining process  
2 were collected and stored in sumps and storage tanks and were  
3 disposed of onsite in sludge pits.

4 7. During its history, the recycling facility has changed  
5 ownership several times.

6 8. From 1934 to 1948, William Dicky and Ray Turner  
7 recycled used oil at the site under the name Para Penn.

8 9. In 1948, William Siegfried and Robert Hall bought the  
9 site and operated it under the name Paraco Oil Incorporated.

10 10. In 1965, the site and operation were sold to Michael  
11 Marcus who operated it under the name Purity Oil Sales,  
12 Incorporated.

13 11. In 1974, Michael Marcus changed the name of Purity Oil  
14 Sales to O.J. Refinery.

15 B. Regulatory and Enforcement History

16 1. In June 1973, Purity Oil began complying with a Fresno  
17 County Superior Court order to empty and backfill the waste pits.  
18 Although the waste pits were backfilled by January 1975, no  
19 evidence is available to indicate that petroleum wastes stored in  
20 the pits were emptied.

21 2. In January 1975, the California Regional Water Quality  
22 Control Board, Central Valley Region (RWQCB) issued a Cleanup and  
23 Abatement Order to O.J. Refinery.

24 3. In January 1975, the Fresno County District Attorney  
25 advised O.J. Refinery that the County would enforce a preliminary  
26 injunction prohibiting the operation of the plant.

27 4. In 1975, Michael Marcus filed for bankruptcy, and the  
28 site was taken by the State of California for nonpayment of

1 taxes.

2 5. A fire at the site in 1976 destroyed the main warehouse  
3 building and adjacent equipment. The remaining equipment was  
4 removed from the site, and the area was partially regraded.

5 6. In 1979, the State of California sold the property to  
6 William Enns. In 1980, the Department of Health Services (DHS),  
7 informed William Enns of a serious hazardous waste problem on his  
8 property and requested a cleanup plan. Enns sued the State  
9 requesting a rescission of the sale. In 1982, the rescission was  
10 granted, and the site was returned to the State of California.

11 7. The Central Valley Regional Water Quality Control Board  
12 (RWQCB) obtained surface-water samples from the North Central  
13 Canal in 1980. One year later, the RWQCB also conducted  
14 groundwater sampling from private wells near the site.

15 8. In February 1982, the EPA Emergency Response Team, DHS,  
16 and RWQCB carried out a joint site investigation that included  
17 surface and subsurface soil sampling, monitoring well  
18 installation, and groundwater sampling. Air quality data were  
19 also obtained to monitor the release of vapors during sampling  
20 and drilling. This investigation indicated that the onsite soil  
21 and groundwater contained volatile organic compounds, semi-  
22 volatile organic compounds and inorganic compounds.

23 9. The site was included on the EPA National Priority List  
24 in December 1982, pursuant to Section 105 of CERCLA, 42 U.S.C.  
25 Section 9605, as set forth at 40 C.F.R. Part 300.

26 10. DHS was designated the lead agency for the site. Field  
27 explorations and chemical testing performed by the State's  
28 consultants, Harding Lawson Associates (HLA), were completed in

1 September 1984. DHS issued a Remedial Investigation Report on  
2 May 12, 1986. During HLA's Remedial Investigation, the EPA  
3 Emergency Response Team removed approximately 1,800 cubic yards  
4 of hazardous oily/tarry materials from the site.

5 11. In January 1986, EPA assumed the lead for the site and  
6 expanded the Remedial Investigation work performed by DHS to  
7 include additional soil and groundwater studies, pursuant to  
8 CERCLA and the National Contingency Plan, 40 C.F.R. Part 300.

9 12. During September 1987, EPA removed approximately 33,000  
10 gallons of waste oil and water from Tank No. 1 to eliminate the  
11 potential for an oil spill.

12 13. The Remedial Investigation (RI) Report prepared by EPA  
13 was released in October 1988.

14 14. Pursuant to Section 117 of CERCLA, 42 U.S.C. § 9617,  
15 EPA published notice of the completion of the Feasibility Study  
16 Report ("FS"). In April 1989, opportunity was provided for  
17 public comment on the proposed remedial action when the FS Report  
18 and the proposed plan were released to the public.

19 15. EPA's decision selecting the groundwater remedial  
20 action to be implemented at the site is embodied in a final  
21 Record of Decision ("ROD"), executed on September 26, 1989, upon  
22 which the State had a reasonable opportunity to review and  
23 comment, and for which the State has given its concurrence. The  
24 Record of Decision is attached to this Order as Appendix 1 and is  
25 incorporated by reference. The Record of Decision is supported  
26 by an administrative record that contains the documents and  
27 information upon which EPA based the selection of the response  
28 action. The Administrative Record was made available to the

1 public in April 1989 and is available in the Fresno County  
2 Central Library.

3 16. The Respondents, Chevron Corporation, Unocal  
4 Corporation, Phillips Petroleum Company, Pacific Gas & Electric  
5 Company, Inc., Southern Pacific Transportation Company,  
6 California Department of Transportation, Morrison-Knudson  
7 Engineers, Inc., Foster Poultry Farms, and Cummins West, Inc.,  
8 each generated waste oil and solvents which were picked up by  
9 Para Penn, Paraco, or Purity Oil employees for recycling. During  
10 this process sludge from Respondents' waste oil was disposed of  
11 at the site. The sludge contained hazardous substances.

12 17. On April 1, 1991, EPA issued special notice letters to  
13 Respondents, as well as other parties pursuant to Section 122(e)  
14 of CERCLA, providing all of them with the opportunity to perform  
15 or finance the remedial action selected in the ROD.

16 18. In response to the special notice letters, EPA entered  
17 into negotiations with the Potentially Responsible Parties for  
18 the performance of the remedial action. The negotiations failed  
19 to result in settlement.

20 C. Groundwater Contamination

21 1. The contaminants found in groundwater at the site,  
22 which exceed State or Federal drinking water standards include  
23 (in parts per billion):  
24  
25  
26  
27  
28

		<u>Maximum</u>
	<u>Contaminant</u>	<u>Standard</u>
		<u>Concentration Detected</u>
1	Trichloroethylene	5
2		8
3	1,2-Dichloroethane	.5
4		8
5	1,1-Dichloroethane	5
6		53
7	1,1-Dichloroethene	6
8		12
9	Benzene	1
10		16.9
11	Vinyl Chloride	.5
12		3
13	Carbon Tetrachloride	.5
14		13
15	Cis-1,2-DCE	6
16		220
17	Trans-1,2-DCE	10
18		19
19	Iron	300
20		1,540
21	Manganese	50
22		2,520

### III. CONCLUSIONS OF LAW AND DETERMINATIONS

- 15 A. The Purity Oil Sales Site and any other area where hazardous  
16 substances have come to be located is a "facility" as defined in  
17 Section 101(9) of CERCLA, 42 U.S.C. § 9601(9).
- 18 B. Each Respondent is a "person" as defined in Section 101(21)  
19 of CERCLA, 42 U.S.C. § 9601(21).
- 20 C. Respondents are each a "liable party" as defined in Section  
21 107(a) of CERCLA, 42 U.S.C. § 9607(a) because each arranged for  
22 the disposal or treatment, or arranged with a transporter for  
23 transport for disposal or treatment of hazardous substances which  
24 each owned or possessed, and are subject to this Order under  
25 Section 106(a) of CERCLA, 42 U.S.C. § 9606(a).
- 26 D. The substances listed in paragraph II(C)(1) are found at the  
27 Site and are "hazardous substances" as defined in Section 101(14)  
28 of CERCLA, 42 U.S.C. § 9601(14).

1 E. The past disposal and migration of hazardous substances from  
2 the Site constitute "releases" as defined in Section 101(22) of  
3 CERCLA, 42 U.S.C. § 9601(22).

4 F. The potential for future migration of hazardous substances  
5 from the Site poses a threat of a "release" as defined in Section  
6 101(22) of CERCLA, 42 U.S.C. § 9601(22).

7 G. The release and threat of release of one or more hazardous  
8 substances from the facility presents an imminent and substantial  
9 endangerment to the public health or welfare or the environment.

10 H. The contamination and endangerment at this Site constitute  
11 an indivisible injury.

12 I. The actions required by this Order are necessary to protect  
13 the public health, welfare, and the environment.

14 IV. NOTICE TO THE STATE

15 On September 23, 1991, prior to issuing this Order, EPA  
16 notified the State of California, Department of Toxic Substances  
17 Control, that EPA would be issuing this Order.

18 V. ORDER

19 Based on the foregoing, the Respondents are hereby ordered  
20 to comply with the following provisions, including but not  
21 limited to all attachments to this Order, all documents  
22 incorporated by reference into this Order, and all schedules and  
23 deadlines in this Order, attached to this Order, or incorporated  
24 by reference into this Order.

25 VI. DEFINITIONS

26 Unless otherwise expressly provided herein, terms used in  
27 this Order which are defined in CERCLA or in regulations  
28 promulgated under CERCLA shall have the meaning assigned to them



1 in the statute or its implementing regulations. Whenever terms  
2 listed below are used in this Order or in the documents attached  
3 to this Order or incorporated by reference into this Order, the  
4 following definitions shall apply:

5 "CERCLA" shall mean the Comprehensive Environmental  
6 Response, Compensation, and Liability Act of 1980, as amended, 42  
7 U.S.C. §§ 9601, et seq.

8 "Clean-up Standard(s)" shall mean the criteria respecting  
9 the degree of clean-up to be achieved in the groundwater at the  
10 Site. These criteria shall include those identified in the ROD,  
11 those established by the applicable or relevant and appropriate  
12 requirements ("ARARs") identified in the ROD, and those set forth  
13 in Section IX (Work To Be Performed).

14 "Day" shall mean a calendar day unless expressly stated to  
15 be a working day. "Working day" shall mean a day other than a  
16 Saturday, Sunday, or Federal holiday. In computing any period of  
17 time under this Order, where the last day would fall on a  
18 Saturday, Sunday, or Federal holiday, the period shall run until  
19 the end of the next working day.

20 "EPA" shall mean the United States Environmental Protection  
21 Agency.

22 "National Contingency Plan" or "NCP" shall mean the National  
23 Contingency Plan promulgated pursuant to Section 105 of CERCLA,  
24 42 U.S.C. § 9605, codified at 40 C.F.R. Part 300, including any  
25 amendments thereto.

26 "Operation and Maintenance" or "O&M" shall mean all  
27 activities required under the Operation and Maintenance Plan  
28 developed by the Respondents pursuant to this Order and Section

1 IX, (Work To Be Performed) and approved by EPA.

2 "Oversight" shall mean the United States' and/or its  
3 contractors' inspection of remedial work and all other actions  
4 taken to verify the adequacy of all activities undertaken and  
5 reports submitted by the Respondent as required under the terms  
6 of this Order.

7 "Performance Standards" shall mean those cleanup standards,  
8 standards of control, and other substantive requirements,  
9 criteria or limitations, identified in the Record of Decision and  
10 Section IX (Work To Be Performed), that the Remedial Action and  
11 work required by this Order must attain and maintain.

12 "Record of Decision" or "ROD" shall mean the EPA Record of  
13 Decision relating to the Site, signed on September, 26, 1989, by  
14 the Regional Administrator, EPA Region 9, and all attachments  
15 thereto.

16 "Remedial Action" or "RA" shall mean those activities, ex-  
17 cept for Operation and Maintenance, to be undertaken by the  
18 Respondents to implement the final plans and specifications as  
19 approved by EPA, including any additional activities required  
20 under Sections IX, X, XI, XII, and XXI of this Order.

21 "Remedial Design" or "RD" shall mean those activities to be  
22 undertaken by the Respondents to develop the final plans and  
23 specifications for the Remedial Action pursuant to the Statement  
24 of Work and this Order.

25 "Response Costs" shall mean all costs including,  
26 administrative, enforcement, removal, investigative and remedial  
27 or other direct and indirect costs and accrued interest thereon,  
28 incurred by the United States pursuant to CERCLA. Response costs

also include but are not limited to oversight costs, which are the costs of overseeing the Work, such as the costs of reviewing or developing plans, reports and other items pursuant to this Order and costs associated with verifying the Work.

"Section" shall mean a portion of this Order identified by a roman numeral, and includes one or more paragraphs.

"Site" or "Purity Oil Sales Superfund Site" shall mean the property located at 3281 South Maple Avenue, Fresno, California including all areas where waste materials were disposed or have come to be located.

"SOW" shall mean the Statement of Work for implementation of the Remedial Action and Operation and Maintenance at the Site, as set forth in Appendix 2 to this Order and any modifications made under this Order.

"State" shall mean the State of California.

"United States" shall mean the United States of America.

"Waste Material" shall mean (1) any "hazardous substance" under Section 101(14) of CERCLA, 42 U.S.C. § 9601(14).

"Work" shall mean all activities the Respondent is required to perform under this Order, including Remedial Design, Remedial Action, Operation and Maintenance, and any activities required to be undertaken pursuant to Sections IX (Work To Be Performed) through XX (Administrative Record) of this Order.

"Work Plan" shall mean the work plan developed by the Respondents and approved by EPA which details the work to be conducted pursuant to this Order.

#### VII. NOTICE OF INTENT TO COMPLY

Respondents shall each provide, not later than five (5)

1 days after the effective date of this Order, written notice to  
2 EPA's Remedial Project Manager (RPM) stating whether or not it  
3 will comply with the terms of this Order. If Respondents, or  
4 any one of them, do not unequivocally commit to perform the  
5 requirements of this Order, they, or each so refusing, shall be  
6 deemed to have violated this Order and to have failed or refused  
7 to comply with this Order. Respondents' written notice shall  
8 describe, using facts that exist on or prior to the effective  
9 date of this Order, any "sufficient cause" defenses asserted by  
10 Respondents under Sections 106(b) and 107(c)(3) of CERCLA, 42  
11 U.S.C. §§ 9606(b), 9607(c)(3). The absence of a response by EPA  
12 to the notice required by this paragraph shall not be deemed to  
13 be acceptance of Respondents' assertions.

14 VIII. PARTIES BOUND

15 A. This Order shall apply to and be binding upon the  
16 Respondents identified in Section II.B.16, their directors,  
17 officers, employees, agents, successors, and assigns.  
18 Respondents are jointly and severally responsible for carrying  
19 out all activities required by this Order. No change in the  
20 ownership, corporate status, or other control of Respondents  
21 shall alter any of the Respondents' responsibilities under this  
22 Order.

23 B. Respondents shall provide a copy of this Order to any  
24 prospective owners or successors before a controlling interest in  
25 Respondents' assets, property rights, or stock are transferred to  
26 the prospective owner or successor. Respondents shall provide a  
27 copy of this Order to each contractor, sub-contractor,  
28 laboratory, or consultant retained to perform any Work under this

1 Order, within five days after the effective date of this Order or  
2 on the date such services are retained, whichever date occurs  
3 later. Respondents shall also provide a copy of this Order to  
4 each person representing any Respondent with respect to the Site  
5 or the Work and shall condition all contracts and subcontracts  
6 entered into hereunder upon performance of the Work in conformity  
7 with the terms of this Order. With regard to the activities un-  
8 dertaken pursuant to this Order, each contractor and subcontrac-  
9 tor shall be deemed to be related by contract to the Respondents  
10 within the meaning of Section 107(b)(3) of CERCLA, 42 U.S.C.  
11 § 9607(b)(3). Notwithstanding the terms of any contract,  
12 Respondents are (and each Respondent is) responsible for  
13 compliance with this Order and for ensuring that their (its)  
14 contractors, subcontractors and agents comply with this Order,  
15 and perform any Work in accordance with this Order.

16 IX. WORK TO BE PERFORMED

17 A. General Obligations

18 1. Respondents shall cooperate with EPA in providing infor-  
19 mation regarding the Work to the public. As requested by EPA,  
20 Respondents shall participate in the preparation of such informa-  
21 tion for distribution to the public and in public meetings which  
22 may be held or sponsored by EPA to explain activities at or  
23 relating to the Site.

24 2. Notwithstanding any approvals which may be granted by  
25 the United States or other governmental entities, Respondents  
26 shall assume any and all liability arising from or relating to  
27 their contractors, subcontractors, or any other person acting on  
28 their behalf in the performance of the Remedial Action or their

1 failure to perform fully or complete the Remedial Action.

2 3. Respondents shall appoint a representative ("Project  
3 Coordinator") designated by them to act on their behalf to  
4 coordinate the Remedial Action. Within 5 days after the  
5 effective date of this Order, Respondents shall notify EPA in  
6 writing of the name and qualifications of the Project  
7 Coordinator, including the support entities and staff, proposed  
8 to be used in carrying out Work under this Order. If at any time  
9 Respondents propose to use a different Project Coordinator,  
10 Respondents shall notify EPA and shall obtain approval from EPA  
11 before the new Project Coordinator performs any Work under this  
12 Order.

13 4. EPA will review Respondents' selection of a Project  
14 Coordinator according to the terms of this paragraph. If EPA  
15 disapproves of the selection of the Project Coordinator,  
16 Respondents shall submit to EPA within 30 days after receipt of  
17 EPA's disapproval of the Project Coordinator previously selected,  
18 a list of Project Coordinators, including primary support  
19 entities and staff, that would be acceptable to Respondents. EPA  
20 will thereafter provide notice to Respondents of the names of the  
21 Project Coordinators that are acceptable to EPA. Respondents may  
22 then select any approved Project Coordinator from that list and  
23 shall notify EPA of the name of the Project Coordinator selected  
24 within twenty-one (21) days of EPA's designation of approved  
25 Project Coordinator.

26 5. Within twenty-one (21) days after the effective date of  
27 this Order, the Respondents shall submit to EPA for approval a  
28 Communication and Coordination Plan (CCP) that specifies the

1 requirements and procedures by which the Respondents will  
2 communicate and coordinate with one another in carrying out the  
3 requirements of the Order. The CCP shall include at a minimum the  
4 following:

5       a. Communication Strategy The Respondents shall  
6 specify how the Project Coordinator and the individual  
7 Respondents will communicate and disseminate information relative  
8 to this Order. The name, title, address and telephone number of  
9 the primary contact person for each Respondent shall be included  
10 in the communication strategy.

11       b. Coordination of Efforts The Respondents shall  
12 describe with specificity how the technical, financial, and  
13 administrative requirements of this Order are to be coordinated  
14 and distributed among and performed by the Respondents. The CCP  
15 shall describe the obligations of each and every Respondent in  
16 full.

17       6. Each Respondent shall sign the CCP (by a duly authorized  
18 representative if the Respondent is other than a natural person)  
19 prior to its submission to EPA. Failure of any Respondent to sign  
20 the CCP will constitute a violation of this Order by the  
21 individual Respondent.

22       7. The Respondents shall submit all proposed changes or  
23 amendments to the CCP to EPA for approval.

24       8. The CCP as approved by EPA shall be incorporated into  
25 and enforceable under this Order.

26       9. While Respondents may collect, stage, and secure  
27 materials on-site, they shall not, in performance of response  
28

activities under this Order, treat and redeposit material back into the Site without the presence and approval of EPA or EPA's designated oversight personnel.

10. Respondents shall dispose of any materials taken off-site in compliance with the EPA's Revised Procedures for Implementating Off-Site Response Actions ("Offsite Policy" EPA OSWER Directive 9834.11, November 13, 1987) and any amendments thereto and the California Code of Regulations (CCR), Title 22, Chapter 30, Article 6.5, Requirements for Transporters of Hazardous Waste.

11. Respondents shall submit all reports (daily, weekly, monthly, etc.) prepared by their contractors and subcontractors to EPA's designated oversight personnel, according to the schedules set forth in the SOW.

12. Respondents shall sample and monitor groundwater as specified in the SOW.

**B. IDENTIFICATION OF AND OBLIGATIONS REGARDING DOCUMENTS**

**TO BE SUBMITTED TO EPA**

**"DELIVERABLES"**

1. Remedial Design Plan: Within 30 days of the effective date of this Order, Respondents shall submit a draft work plan to EPA for the design of the Remedial Action at the Site ("Remedial Design Work Plan"). The Remedial Design Work Plan shall provide for design of the remedy set forth in the ROD in accordance with the SOW and, upon its approval by EPA, shall be incorporated into and become enforceable under this Order. In accordance with the attached SOW, the Respondents shall submit to



1 EPA a Health and Safety Plan for field design activities which  
2 conforms to the applicable Occupational Safety and Health  
3 Administration and EPA requirements including, but not limited  
4 to, 29 C.F.R. § 1910.120.

5           a. The Remedial Design Work Plan shall include plans  
6 and schedules for implementation of all remedial design and pre-  
7 design tasks identified in the SOW, including, but not limited  
8 to, plans and schedules for the completion of: Any additional  
9 field or pilot testing work necessary to complete each component  
10 of the Remedial Action; Sampling and Analysis Plan; Quality  
11 Assurance Project Plans (QAPPs); Health & Safety Plan;  
12 Preliminary Design Submittals; Intermediate Design Submittals;  
13 Pre-final and Final Design Submittals. In addition, the Remedial  
14 Design Work Plan shall include a schedule for completion of the  
15 Remedial Action Work Plan.

16           b. Upon approval by EPA of the Remedial Design Work  
17 Plan, Respondents shall implement the Remedial Design Work Plan  
18 in accordance with the schedule approved by EPA. The Respondents  
19 shall submit all plans, submittals and other deliverables  
20 required under the approved Remedial Design Work Plan in  
21 accordance with the approved schedule for review and approval  
22 pursuant to the SOW. Unless otherwise directed by EPA,  
23 Respondents shall not commence further Remedial Design Activities  
24 at the Site prior to approval of the Remedial Design Work Plan.

25           c. The preliminary design submittal shall include, at  
26 a minimum, the following: (1) design criteria to achieve the  
27 Performance Standards; (2) results of additional field sampling;  
28

(3) project delivery strategy; (4) preliminary plans, drawings and sketches; (5) required specifications in outline form; and (6) preliminary construction schedule.

d. The Pre-final and Final design submittals shall include, at a minimum, the following: (1) plans and specifications; (2) Remedial Action project schedule; (3) Remedial Action Health and Safety Plan; (4) Remedial Action Sampling and Analysis Plan; (5) Construction Quality Assurance Project Plan (CQAPP); (6) Operation and Maintenance Plan; (7) and Operation and Maintenance Quality Assurance Project Plan. The CQAPP, which shall detail the approach to quality assurance during construction activities at the site, shall specify a quality assurance official ("QA Official"), independent of the Supervising Contractor, to conduct a quality assurance program during the construction phase of the project.

## 2. Remedial Action Work Plan

a. Respondents shall submit, a work plan for the performance of the Remedial Action at the Site ("Remedial Action Work Plan") with the final design. The Remedial Action Work Plan shall provide plans and schedules for construction of the components of the Remedial Action, in accordance with SOW, as set forth in the design plans and specifications in the approved final design submittal. Upon its approval by EPA, the Remedial Action Work Plan shall be incorporated into and become enforceable under this Order.

b. The Remedial Action Work Plan shall contain all items specified in the attached SOW, including the following:

(1) the schedule for completion of the Remedial Action; (2) method for selection of the contractor; (3) schedule for developing and submitting other required Remedial Action Plans; (4) methodology for implementation of the Construction Quality Assurance Plan; (5) methods for satisfying ARARs and permitting requirements; (6) methodology for implementation of the Operation and Maintenance Plan; (7) methodology for implementation of the Contingency Plan; (8) tentative formulation of the Remedial Action Team; (9) construction quality control plan (by constructor); and (10) procedures and plans for the decontamination of equipment and the disposal of contaminated materials, and (11) a description of the monitoring plan to be implemented to demonstrate compliance with ROD standards through confirmation sampling. The Remedial Action Work Plan shall include a schedule for implementation of all Remedial Action tasks identified in the final design submittal and shall identify the initial formulation of the Settling Defendants' Remedial Action Project Team (including, but not limited to, the Supervising Contractor).

c. Upon approval by EPA of the Remedial Action Work Plan, Respondents shall implement the activities required under the Remedial Action Work Plan in accordance with the provisions of the Remedial Action Work Plan, including the schedule as approved by EPA. The Respondents shall submit all plans, submittals, or other deliverables required under the approved Remedial Action Work Plan in accordance with the approved schedule for review and approval pursuant to the SOW. Unless

1 otherwise directed by EPA, Respondents shall not commence  
2 physical on-site activities at the Site prior to approval of the  
3 Remedial Action Work Plan.

4       3. Monthly Progress Reports: The Respondents shall  
5 provide monthly written progress reports to EPA. These progress  
6 reports shall be submitted by the 10th of each month for work  
7 done the preceding month and planned for the current month,  
8 including sampling events. The first monthly report pursuant to  
9 this Order will be due by the tenth of the calendar month  
10 immediately following the effective date of this Order. The  
11 progress reports shall include, but not be limited to the  
12 information as described in Task 8.1 of the SOW.

13       4. Annual Monitoring Report: The Respondents shall submit  
14 an Annual Report to EPA within two (2) weeks after receipt of  
15 validated data for the final monthly sampling event of each  
16 calendar year until the Work is completed. The Annual Report  
17 shall summarize the groundwater monitoring data and the treatment  
18 system operational data, as appropriate, for the previous year.  
19 This Annual Report shall contain, but not be limited to a summary  
20 of the information collected over the previous year, as described  
21 in Task 8.3 of the SOW.

22       5. Confirmation Sampling Plan: Respondents shall submit a  
23 Confirmation Sampling Plan that describes the sampling program to  
24 be completed to verify that Clean-up Standards have been  
25 achieved.

26       6. Respondents shall submit a draft and a final copy of  
27 each of the deliverables as described above (except the monthly  
28

1 report and the Annual Reports) pursuant to the schedule described  
2 and attached to the SOW. Any failure of the Respondents to  
3 submit a deliverable in compliance with the schedule will be  
4 deemed a violation of this Order.

5 7. After review of any deliverable, plan, report, or other  
6 item which is required to be submitted for review and approval  
7 pursuant to this Order, EPA may: (a) approve the submission; (b)  
8 approve the submission with modifications; (c) disapprove the  
9 submission and direct Respondents to re-submit the document after  
10 incorporating EPA's comments; or (d) disapprove the submission  
11 and assume responsibility for performing all or any part of the  
12 response action. As used in this Order, the terms "approval by  
13 EPA", "EPA approval" or a similar term mean the action described  
14 in subparagraphs (a) or (b) of this paragraph.

15 8. In the event of approval or approval with modifications  
16 by EPA, Respondents shall proceed to take any action required by  
17 the deliverable, plan, report, or other item, as approved or  
18 modified by EPA.

19 9. Upon receipt of the notice of disapproval or a request  
20 for modification, Respondents shall, within fourteen (14) days,  
21 correct the deficiencies and resubmit the deliverable, plan,  
22 report or other item for approval. Notwithstanding the notice of  
23 disapproval, Respondents shall proceed, at the direction of EPA,  
24 to take any action required by any non-deficient portion of the  
25 submission.

26 10. If any submission is not approved by EPA, Respondents  
27 shall be deemed to be in violation of this Order.

28

11. The Work performed by the Respondents pursuant to this Order shall, at a minimum, achieve the Performance Standards.

C. ADDITIONAL OBLIGATIONS: Work To Be Performed

1. Neither the Work Plan nor any approvals, permits or other permissions which may be granted by EPA related to this Order constitute a warranty or representation of any kind by the United States that the Work Plan will achieve the standards set forth in the ROD, and in the SOW, and shall not foreclose the United States from seeking performance of all terms and conditions of this Order.

Nothing in this Order shall be construed to relieve Respondents of their obligations to achieve all Clean-up Standards and Performance Standards set forth in the ROD and in the SOW. Following termination of this Order, if post-termination monitoring indicates that the groundwater Clean-up Standards are being exceeded, Respondents shall recommence treatment of the groundwater until Clean-up Standards have been achieved.

2. Respondents shall meet all Clean-up Standards and Performance Standards identified in the ROD and the SOW, including, but not limited to the following:

Groundwater on-site shall be treated to meet all Clean-up Standards specified in each of the subparagraphs below. "On-site" shall mean the areal extent of contamination and all areas in close proximity to the contamination necessary for implementation of the Remedial Action.

a. All Maximum Contaminant Levels (MCLs) established under

1 the Safe Drinking Water Act at the time of entry of this Order or  
2 at any subsequent time while the Order is in effect, including  
3 but not limited to, the following MCL's currently established at  
4 40 C.F.R. Part 141, Subpart B, and

5       b. All State of California MCLs established under the  
6 California Administrative Code, Title 22, Division 4, at the time  
7 of entry of this Order or at any subsequent time while the Order  
8 is in effect, including but not limited to the following MCLs  
9 currently established at the California Administrative Code,  
10 Title 22, Division 4, Sections 64435 - 64445.1 and/or State  
11 Action Levels established under the authority of the California  
12 Health and Safety Code, Chapter 6.5, Sections 25150 and 25159;  
13 Chapter 6.6, Section 25187(a); and Chapter 6.8, Sections 25355.5  
14 and 25356.1(c) at the time of entry of this Order or at any  
15 subsequent time while the Order is in effect.

16       Current clean-up standards based on subparagraphs (1) & (2)  
17 above include but are not limited to the following:

18	<u>Contaminant</u>	<u>Standard (ppb)</u>
19	Trichloroethylene	5
20	1,2-Dichloroethane	.5
21	1,1-Dichloroethane	5
22	1,1-Dichloroethene	6
23	Benzene	1
24	Vinyl Chloride	.5
25	Carbon Tetrachloride	.5
26	Cis-1,2-DCE	6
27	Trans-1,2-DCE	10

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1 that must be undertaken to complete the Remedial Action and shall  
2 set forth in the notice a schedule for performance of such  
3 activities. Respondents shall perform all activities described  
4 in the notice in accordance with the specifications and schedules  
5 established therein. If EPA concludes, following the initial or  
6 any subsequent certification of completion by Respondents that  
7 the Remedial Action has been fully performed in accordance with  
8 this Order, EPA may notify Respondents that the Remedial Action  
9 has been fully performed. EPA's notification shall be based on  
10 present knowledge and Respondents' certification to EPA, and  
11 shall not limit EPA's right to perform periodic reviews pursuant  
12 to Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), or to take or  
13 require any action that in the judgment of EPA is appropriate at  
14 the Site, in accordance with 42 U.S.C. §§ 9604, 9606, or 9607.

15 6. Within thirty (30) days after Respondents conclude that  
16 all phases of the Work have been fully performed, that the  
17 Performance Standards have been attained, and that all Operation  
18 and Maintenance activities have been completed, Respondents shall  
19 submit to EPA a Work Completion Report certifying that the Work  
20 has been completed in full satisfaction of the requirements of  
21 this Order. EPA shall require such additional activities as may  
22 be necessary to complete the Work or EPA may, based upon present  
23 knowledge and Respondents' certification to EPA, issue written  
24 notification to Respondents that the Work has been completed, as  
25 appropriate, in accordance with procedures determined by EPA for  
26 Respondents' certification of completion of the Remedial Action.  
27 EPA's notification shall not limit EPA's right to perform

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1 periodic reviews pursuant to Section 121(c) of CERCLA, 42 U.S.C.  
2 § 9621(c), or to take or require any action that in the judgment  
3 of EPA is appropriate at the Site or study area, in accordance  
4 with 42 U.S.C. §§ 9604, 9606, or 9607.

5 X. ADDITIONAL WORK

6 A. In the event that EPA or Respondents determine that  
7 additional response work is necessary to protect human health and  
8 the environment, to meet the clean-up standards described in the  
9 ROD, the SOW, or in Section IX (Work To Be Performed) of this  
10 Order, Respondents shall implement such additional work.  
11 Notification of any additional work will be provided to the  
12 Project Coordinator.

13 B. Unless otherwise stated by EPA, within 30 days of  
14 receipt of notice by EPA that additional work is necessary pur-  
15 suant to this Section, the Respondents shall submit a work plan  
16 as specified by EPA. The plan shall conform to the requirements  
17 in Section IX (Work To Be Performed).

18 C. Any additional work determined to be necessary by  
19 Respondents is subject to approval by EPA prior to  
20 implementation.

21 D. Any additional work determined to be necessary by  
22 Respondents and approved by EPA, or determined to be necessary by  
23 EPA to protect human health and the environment, to carry out the  
24 remedy described in the ROD, or meet the Clean-up Standards,  
25 shall be completed by Respondents in accordance with the  
26 standards, specifications, and schedules approved by EPA.

27 E. If EPA disapproves the plan pursuant to the provisions  
28

1 of Section IX (Work To Be Performed), within 14 days of such  
2 disapproval, Respondents, consistent with Section IX (Work to Be  
3 Performed), shall submit a modified plan.

4 F. Respondents shall promptly implement the plan as  
5 approved or modified by EPA.

#### 6 XI. EPA PERIODIC REVIEW

7 Under Section 121(c) of CERCLA, 42 U.S.C. § 9621(c), and any  
8 applicable regulations, EPA may review the Site to assure that  
9 the Work performed pursuant to this Order adequately protects  
10 human health and the environment. Until such time as EPA cer-  
11 tifies completion of the Work, Respondents shall conduct the  
12 requisite studies, investigations, or other response actions as  
13 determined necessary by EPA in order to permit EPA to conduct the  
14 review under Section 121(c) of CERCLA. As a result of any review  
15 performed under this paragraph, Respondents may be required to  
16 perform additional Work or to modify Work previously performed.

#### 17 XII. ENDANGERMENT AND EMERGENCY RESPONSE

18 A. In the event of any action or occurrence during the  
19 performance of the Work which causes or threatens to cause a  
20 release of a hazardous substance or which may present an  
21 immediate threat to public health or welfare or the environment,  
22 Respondents shall immediately take all appropriate action to  
23 prevent, abate, or minimize the threat, and shall immediately  
24 notify the EPA Remedial Project Manager. If this person is not  
25 available, Respondents shall notify the EPA Emergency Response  
26 Unit, Region 9. Respondents shall take such action in  
27 consultation with EPA's RPM, and in accordance with all  
28

1 applicable provisions of this Order, including but not limited to  
2 the Health and Safety Plan and the Contingency Plan. In the  
3 event that Respondents fail to take appropriate response action  
4 as required by this Section, and EPA takes that action instead,  
5 Respondents shall be liable to EPA for all costs of the response  
6 action pursuant to Section 107 of CERCLA.

7 B. Nothing in the preceding paragraph shall be deemed to  
8 limit any authority of the United States to take, direct, or  
9 order all appropriate action to protect human health and the  
10 environment or to prevent, abate, or minimize an actual or  
11 threatened release of hazardous substances on, at, or from the  
12 Site.

#### 13 XIII. COMPLIANCE WITH APPLICABLE LAWS

14 A. All activities conducted by Respondents pursuant to this  
15 Order shall be performed in accordance with the requirements of  
16 all Federal and state laws and regulations. EPA has determined  
17 that the activities contemplated by this Order are consistent  
18 with the National Contingency Plan (NCP) if performed in full  
19 compliance with the ROD, this Order, and the plans and schedules  
20 approved here under.

21 B. Except as provided in Section 121(e) of CERCLA and the  
22 NCP, no permit shall be required for any portion of the Work  
23 conducted entirely on-Site; however, Respondents shall meet all  
24 substantive requirements of ARARs as set forth in the ROD. Where  
25 any portion of the Work requires a Federal or state permit or  
26 approval, Respondents shall submit timely applications and take  
27 all other actions necessary to obtain and to comply with all such  
28

1 permits or approvals.

2 C. This Order is not, and shall not be construed to be, a  
3 permit issued pursuant to any Federal or state statute or  
4 regulation.

5 XIV. REMEDIAL PROJECT MANAGER

6 A. All communications, whether written or oral, from  
7 Respondents to EPA shall be directed to EPA's Remedial Project  
8 Manager. Respondents shall submit to EPA four copies of all  
9 deliverables, documents, including plans, reports, and other  
10 correspondence, which are developed pursuant to this Order, and  
11 shall send these documents by overnight mail.

12 EPA's Remedial Project Manager (RPM) is:

13 Janet Rosati  
14 EPA H-6-1  
15 75 Hawthorne  
San Francisco, CA 94105

16 B. EPA has the unreviewable right to change its Remedial  
17 Project Manager. If EPA changes its Remedial Project Manager,  
18 EPA will inform Respondents in writing of the name, address, and  
19 telephone number of the new Remedial Project Manager.

20 C. EPA's RPM shall have the authority lawfully vested in  
21 Remedial Project Managers and On-Scene Coordinators (OSC) by the  
22 National Contingency Plan, 40 C.F.R. Part 300. EPA's RPM shall  
23 have authority, consistent with the National Contingency Plan, to  
24 halt any work required by this Order, and to take any necessary  
25 response action.

26 XV. SITE ACCESS AND DATA/DOCUMENT AVAILABILITY

27 A. To the extent that the Site or other areas where work is  
28 to be performed is presently owned or controlled by parties other

1 | than those bound by this Order and to the extent that access to  
2 | or easements over property is required for the proper and com-  
3 | plete performance of this Order, Respondents shall obtain access  
4 | agreements from the present owners or those persons who have  
5 | control over the property, including lessees, within sixty (60)  
6 | days of the effective date of this Order. Site access agreements  
7 | shall provide access to EPA, its contractors and representatives,  
8 | and to Respondents and their Contractor(s) and authorized  
9 | representatives, and such agreements shall specify that  
10 | Respondents are not EPA's representatives with respect to  
11 | liability associated with Site activities.

12 |       B. Respondents shall save and hold harmless the United  
13 | States and its officials, agents, employees, contractors,  
14 | subcontractors, or representatives for or from any and all claims  
15 | or causes of action or other costs incurred by the United States  
16 | including but not limited to attorneys fees and other expenses of  
17 | litigation and settlement arising from or on account of acts or  
18 | omissions of Respondents, their officers, directors, employees,  
19 | agents, contractors, subcontractors, and any persons acting on  
20 | their behalf or under their control, in carrying out activities  
21 | pursuant to this Order.

22 |       C. In the event that site access agreements are not ob-  
23 | tained within the sixty (60) day period, Respondents shall notify  
24 | EPA within sixty five (65) days of the effective date of this  
25 | Order regarding both the lack of, and efforts to obtain, such  
26 | agreements. If Respondents fail to gain access within 60 days,  
27 | they shall continue to use best efforts to obtain access until  
28 |

1 access is granted. For purposes of this paragraph, "best ef-  
2 forts" includes but is not limited to, seeking judicial assis-  
3 tance and the payment of money as consideration for access.

4 D. Respondents or any of their agents or representatives  
5 shall allow EPA and its authorized representatives and  
6 contractors to enter and freely move about all property at the  
7 Site and off-Site areas subject to or affected by the work under  
8 this Order or where documents required to be prepared or  
9 maintained by this Order are located, for the purposes of  
10 inspecting conditions, activities, the results of activities,  
11 records, operating logs, and contracts related to the Site or  
12 Respondents and its representatives or contractors pursuant to  
13 this Order; reviewing the progress of the Respondents in carrying  
14 out the terms of this Order; conducting tests as EPA or its  
15 authorized representatives or contractors deem necessary; using a  
16 camera, sound recording device or other documentary type  
17 equipment; and verifying the data submitted to EPA by  
18 Respondents. Respondents shall allow EPA and its authorized  
19 representatives to enter the Site, to inspect and copy all  
20 records, files, photographs, documents, sampling and monitoring  
21 data, and other writings related to work undertaken in carrying  
22 out this Order. Nothing herein shall be interpreted as limiting  
23 or affecting EPA's right of entry or inspection authority under  
24 Federal law.

25 E. Respondents may assert a claim of business  
26 confidentiality covering part or all of the information submitted  
27 to EPA pursuant to the terms of this Order under 40 C.F.R.  
28

1 § 2.203, provided such claim is not inconsistent with Section  
2 104(e)(7) of CERCLA, 42 U.S.C. § 9604(e)(7) or other provisions  
3 of law. This claim shall be asserted in the manner described by  
4 40 C.F.R. § 2.203(b) and substantiated by Respondents at the time  
5 the claim is made. Information determined to be confidential by  
6 EPA will be given the protection specified in 40 C.F.R. Part 2.  
7 If no such claim accompanies the information when it is submitted  
8 to EPA, it may be made available to the public by EPA or the  
9 state without further notice to the Respondents. Respondents  
10 shall not assert confidentiality claims with respect to any data  
11 related to Site conditions, sampling, monitoring or any other  
12 information addressed by Section 104(e)(7)(F).

13 F. Respondents shall maintain for the period during which  
14 this Order is in effect, an index of documents that Respondents  
15 claim contain confidential business information. The index shall  
16 contain, for each document, the date, author, addressee, and  
17 subject of the document. Upon written request from EPA,  
18 Respondents shall submit a copy of the index to EPA.

19 G. Any person obtaining access to the Site pursuant to this  
20 provision shall comply with all applicable provisions of the  
21 Worker Health and Safety Plan as submitted pursuant to the SOW.

22 H. Notwithstanding any provision of this Order, the United  
23 States retains all of its access authorities and rights under  
24 CERCLA, RCRA and any other applicable federal statute or  
25 authority.

26 I. Each Respondent shall provide to EPA upon request, copies  
27 of all documents and information within its possession and/or  
28



1 control or that of its contractors or agents relating to  
2 activities at the Site or to the implementation of this Order,  
3 including but not limited to trucking logs, receipts, reports,  
4 correspondence, or other documents or information related to the  
5 Work. Each Respondent shall also make available to EPA for  
6 purposes of investigation, information gathering, or testimony,  
7 its employees, agents, or representatives with knowledge of  
8 relevant facts concerning the performance of the Work.

9                   XVI. RECORD PRESERVATION

10           A. Until ten (10) years after EPA provides notice to  
11 Respondents that the Work has been completed, each Respondent  
12 shall preserve and retain all records and documents in its  
13 possession or control, including the documents in the possession  
14 or control of their contractors and agents on and after the  
15 effective date of this Order that relate in any manner to the  
16 Site. At the conclusion of this document retention period, each  
17 Respondent shall notify the United States at least ninety (90)  
18 calendar days prior to the destruction of any such records or  
19 documents, and upon request by the United States, Respondent  
20 shall deliver any such records or documents to EPA.

21           B. Within 10 days after the effective date of this Order,  
22 each Respondent shall submit a written certification to EPA's RPM  
23 that they have not altered, mutilated, discarded, destroyed or  
24 otherwise disposed of any records, documents or other information  
25 relating to their potential liability with regard to the Site  
26 since notification of potential liability by the United States or  
27 the State or the filing of suit against it regarding the Site.

1 Respondents shall not dispose of any such documents without prior  
2 approval by EPA. Each Respondent shall, upon EPA's request and  
3 at no cost to EPA, deliver the documents or copies of the  
4 documents to EPA.

5 **XVII. DELAY IN PERFORMANCE**

6 A. Any delay in performance of this Order that, in EPA's  
7 judgment, is not properly justified by Respondents under the  
8 terms of this Section shall be considered a violation of this Or-  
9 der. Any delay in performance of this Order shall not affect  
10 Respondents' obligations to fully perform all obligations under  
11 the terms and conditions of this Order.

12 B. Respondents shall notify EPA of any delay or anticipated  
13 delay in performing any requirement of this Order. Such  
14 notification shall be made by telephone to EPA's RPM within forty  
15 eight (48) hours after any Respondent first knew or should have  
16 known that a delay might occur. Respondents shall adopt all  
17 reasonable measures to avoid or minimize any such delay. Within  
18 five (5) business days after notifying EPA by telephone,  
19 Respondents shall provide written notification fully describing  
20 the nature of the delay, any justification for delay, any reason  
21 why Respondents should not be held strictly accountable for  
22 failing to comply with any relevant requirements of this Order,  
23 the measures planned and taken to minimize the delay, and a  
24 schedule for implementing the measures that will be taken to  
25 mitigate the effect of the delay. Increased costs or expenses  
26 associated with implementation of the activities called for in  
27 this Order is not a justification for any delay in performance.

28

1                   XVIII. ASSURANCE OF ABILITY TO COMPLETE WORK

2           A. Respondents shall demonstrate their ability to complete  
3 the Work required by this Order and to pay all claims that arise  
4 from the performance of the Work by obtaining and presenting to  
5 EPA within thirty (30) days after approval of the RD Work Plan,  
6 one of the following: (1) a performance bond; (2) a letter of  
7 credit; (3) a guarantee by a third party; or (4) internal  
8 financial information to allow EPA to determine that Respondent  
9 has sufficient assets available to perform the Work. Respondents  
10 shall demonstrate financial assurance in an amount no less than  
11 \$14,500,000, the estimate of cost for the Remedial Design and  
12 Remedial Action. If Respondents seeks to demonstrate ability to  
13 complete the Remedial Action by means of internal financial  
14 information, or by guarantee of a third party, they shall  
15 re-submit such information annually, on the anniversary of the  
16 effective date of this Order. If EPA determines that such  
17 financial information is inadequate, Respondents shall, within  
18 thirty (30) days after receipt of EPA's notice of determination,  
19 obtain and present to EPA for approval one of the other three  
20 forms of financial assurance listed above.

21           B. At least seven (7) days prior to commencing any work at  
22 the Site pursuant to this Order, Respondents shall submit to EPA  
23 a certification that Respondents or their contractors and  
24 subcontractors have adequate insurance coverage or have  
25 indemnification for liabilities for injuries or damages to  
26 persons or property which may result from the activities to be  
27 conducted by or on behalf of Respondents pursuant to this Order.  
28

1 Respondents shall ensure that such insurance or indemnification  
2 is maintained for the duration of performance of the Work  
3 required by this Order.

4 XIX. UNITED STATES NOT LIABLE

5 The United States, by issuance of this Order, assumes no  
6 liability for any injuries or damages to persons or property  
7 resulting from acts or omissions by any or all Respondents, or  
8 their directors, officers, employees, agents, representatives,  
9 successors, assigns, contractors, or consultants in carrying out  
10 any action or activity pursuant to this Order. Neither EPA nor  
11 the United States may be deemed to be a party to any contract  
12 entered into by any or all Respondents or their directors,  
13 officers, employees, agents, successors, assigns, contractors, or  
14 consultants in carrying out any action or activity pursuant to  
15 this Order.

16 XX. ENFORCEMENT AND RESERVATIONS

17 A. EPA reserves the right to bring an action against Respon-  
18 dents under Section 107 of CERCLA, 42 U.S.C. § 9607, for recovery  
19 of any response costs incurred by the United States related to  
20 this Order. This reservation shall include but not be limited to  
21 past costs, direct costs, indirect costs, the costs of oversight,  
22 the costs of compiling the cost documentation to support  
23 oversight cost demand, as well as accrued interest as provided in  
24 Section 107(a) of CERCLA.

25 B. Notwithstanding any other provision of this Order, at any  
26 time during the response action, EPA may perform its own studies,  
27 complete the response action (or any portion of the response  
28

1 action) as provided in CERCLA and the NCP, and seek reimbursement  
2 from Respondents for its costs, or seek any other appropriate  
3 relief.

4 C. Nothing in this Order shall preclude EPA from taking any  
5 additional enforcement actions, including modification of this  
6 Order or issuance of additional Orders, and/or additional  
7 remedial or removal actions as EPA may deem necessary, or from  
8 requiring Respondents in the future to perform additional ac-  
9 tivities pursuant to CERCLA, 42 U.S.C. § 9606(a), et seq., or any  
10 other applicable law. Respondents shall be liable under CERCLA  
11 Section 107(a), 42 U.S.C. § 9607(a), for the costs of any such  
12 additional actions.

13 D. Notwithstanding any provision of this Order, the United  
14 States hereby retains all of its information gathering, inspec-  
15 tion and enforcement authorities and rights under CERCLA, RCRA  
16 and any other applicable statutes or regulations.

17 E. Each Respondent shall be subject to civil penalties under  
18 Section 106(b) of CERCLA, 42 U.S.C. § 9606(b), of not more than  
19 \$25,000 for each day in which it willfully violates, or fails or  
20 refuses to comply with this Order without sufficient cause. In  
21 addition, failure to properly provide response action under this  
22 Order, or any portion hereof, without sufficient cause, may  
23 result in liability under Section 107(c)(3) of CERCLA, 42  
24 U.S.C. § 9607(c)(3), for punitive damages in an amount at least  
25 equal to, and not more than three times the amount of any costs  
26 incurred by the Fund as a result of such failure to take proper  
27 action.

1 F. Nothing in this Order shall constitute or be construed as  
2 a release from any claim, cause of action or demand in law or  
3 equity against any person for any liability it may have arising  
4 out of or relating in any way to the Site.

5 G. If a court issues an order that invalidates any provision  
6 of this Order or finds that any Respondent has sufficient cause  
7 not to comply with one or more provisions of this Order,  
8 Respondents shall remain bound to comply with all provisions of  
9 this Order not invalidated by the court's order. Each Respondent  
10 is jointly and severally liable with all requirements of the  
11 Order.

12 XXI. ADMINISTRATIVE RECORD

13 Upon request by EPA, Respondents must submit to EPA all  
14 documents related to the selection of the response action for  
15 possible inclusion in the administrative record file.

16 XXII. EFFECTIVE DATE AND COMPUTATION OF TIME

17 This Order shall be effective fifteen (15) days after the  
18 Order is signed by the Director, Hazardous Waste Management  
19 Division. All times for performance of ordered activities shall  
20 be calculated from this effective date.

21 XXIII. OPPORTUNITY TO CONFER

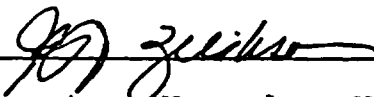
22 A. Respondents may, within five (5) days after the date this  
23 Order is signed, request a conference with EPA's Director of the  
24 Hazardous Waste Management Division, or whomever the Director may  
25 designate except for the RPM, to discuss this Order. If  
26 requested, the conference shall occur within 14 days of the  
27 request. The conference shall take place at 75 Hawthorne Street,  
28

1 San Francisco, California.

2 B. The purpose and scope of the conference shall be limited  
3 to issues involving the implementation of the response actions  
4 required by this Order and the extent to which Respondents intend  
5 to comply with this Order. This conference is not an evidentiary  
6 hearing, and does not constitute a proceeding to challenge this  
7 Order. It does not give Respondents a right to seek review of  
8 this Order, or to seek resolution of potential liability, and no  
9 official stenographic record of the conference will be made. At  
10 any conference held pursuant to Respondents' request, Respondents  
11 may appear in person or by an attorney or other representative.

12 Requests for a conference must be by telephone followed by  
13 written confirmation mailed that day to Janet Rosati, RPM, (415)  
14 744-2247, 75 Hawthorne Street, San Francisco, CA 94105.

15  
16 So Ordered, this 30<sup>th</sup> day of Sept., 1991.

17  
18  
19  
20 BY:   
21 Director, Hazardous Waste Management Division  
22 U.S. Environmental Protection Agency  
23  
24  
25  
26  
27  
28

STATEMENT OF WORK  
FOR  
GROUNDWATER REMEDIAL DESIGN AND REMEDIAL ACTION  
AT  
THE PURITY OIL SALES SUPERFUND SITE  
FRESNO, CALIFORNIA

**I. PURPOSE**

The purpose of this Statement of Work (SOW) is to fully implement the groundwater Remedial Design, Remedial Action, and Operation and Maintenance activities described in the Record of Decision (ROD) for the Purity Oil Sales, Inc. Superfund Site, Groundwater and Tanks Operable Unit, which was signed by the Regional Administrator on September 26, 1989.

The U.S. Environmental Protection Agency (EPA) Superfund Remedial Design and Remedial Action Guidance (OSWER Directive 9355.0-04A, June 1986), the ROD, the approved Remedial Design/Remedial Action (RD/RA) Work Plan (to be developed as a submittal under this SOW), this SOW, and any additional guidance provided by EPA shall be followed in designing, implementing, and submitting documents for the Remedial Action at the Purity Oil Sales site.

**II. SITE DESCRIPTION**

The seven-acre Purity Oil Superfund site is located approximately one-half mile south of the Fresno city limits, in the township of Malaga. The site is located in a mixed-use area and is surrounded by agricultural and industrial land on the west, a scrap iron yard on the north, a residential trailer park and market/gas station on the northeast, a propane distributor on the east, a small farm on the southeast, and a used auto parts business on the south.

Petroleum products have been re-refined at the site since 1934. These waste oils came from businesses such as service stations, car dealers, truck stops, electrical transformer yards, and military facilities. The used oil was re-refined using a number of treatment processes including clarification, chemical addition, dehydration, distillation, and filtration. The oil and by-products from the re-refining process were collected and stored in sumps and storage tanks and were disposed of onsite in sludge pits.



The site was operated from 1934 to the mid-1970's. During its history, the facility changed ownership several times. In 1973, Purity Oil began complying with a Fresno County Superior Court order to empty and backfill the waste pits. By early 1975, the waste pits had been completely filled, however, no evidence is available to indicate petroleum wastes stored in the pits were emptied. A fire at the site in 1976 destroyed the main warehouse building and adjacent equipment. The remaining equipment was removed from the site, and the area was partially regraded.

### **III. NATURE AND EXTENT OF THE PROBLEM**

The groundwater beneath the site is contaminated by a variety of organic and inorganic compounds. Groundwater contaminants requiring remediation include volatile organic compounds, iron and manganese. The approximate vertical and lateral extent of contamination has been defined from onsite and offsite monitoring and private well data.

These data indicate that a plume of contaminated groundwater extends to (at least) an irrigation well located approximately 2,800 feet downgradient of the site. The width of the plume is estimated to be approximately 800 feet.

### **IV. SCOPE OF REMEDIAL DESIGN AND REMEDIAL ACTION**

#### **A. TASK 1: Prepare Remedial Design Work Plan**

The Respondents shall prepare a Remedial Design Work Plan which identifies and describes all work required for the completion of all tasks outlined in this Statement of Work, including a detailed discussion of the technical approach, budget and schedule.

The Work Plan shall describe any additional field work or pilot testing necessary to complete the Remedial Action. A Sampling and Analysis Plan (SAP), Quality Assurance Project Plan (QAPP), and Health and Safety Plan shall be prepared for any additional field work or pilot testing.

The Work Plan shall include a description of qualifications and responsibilities of key personnel directing the Remedial Design, including contractor personnel. The Respondents shall submit the Draft Remedial Design Work Plan to EPA according to the Schedule and Summary of Submittals (Section V). The Respondents shall submit a Final Remedial Design Work Plan incorporating EPA's comments on the Draft Work Plan according to the Schedule and Summary of Submittals.

**B. TASK 2: Define Downgradient and Lateral Extent of Plume**

The Respondents shall install a sufficient number of monitoring wells as approved by EPA in order to better define the lateral and downgradient extent of the plume. These wells may be used as part of the monitoring well system defining the hydraulic zone of capture and groundwater quality.

The Respondents shall furnish all services, including personnel, materials, supplies, and equipment. Sufficient sampling, testing, and analysis shall be performed until the plume has been defined to the maximum extent possible.

**C. TASK 3: Prepare Plans and Specifications**

The Respondents shall develop final plans and specifications required to construct a groundwater extraction, treatment, disposal, and monitoring system as described in the ROD.

The plans and specifications for groundwater extraction shall contain no less than ten extraction wells in locations specified in the ROD.

Treated groundwater shall be reinjected into the same aquifer from which it was extracted, beyond the downgradient extent of the plume. The Respondents shall design 50% more reinjection wells than extraction wells. The design plans and specifications shall evaluate the necessity of installing piezometers to monitor the performance of the reinjection wells.

The Respondents shall develop final plans and specifications in design phases as set forth in this Statement of Work.

Submittals for each design phase shall include plans and specifications and a summary of capital and operation and maintenance costs.

The Prefinal (90%) Design package shall include a draft Remedial Action project schedule, a Construction Quality Assurance Project Plan, an RA Health and Safety Plan, an RA Sampling and Analysis Plan which includes a Confirmation Sampling Plan, an Operation and Maintenance Plan, and an Operation and Maintenance Quality Assurance Project Plan.

The Respondents shall obtain any permits and approvals necessary for project implementation and submit such documents with the Prefinal (90%) Design Package.

The Sampling and Analysis Plan (SAP) shall describe in detail the analytical procedures, data collection equipment, sample types, locations and frequency, analysis of interest, and a schedule outlining when events will take place and when

deliverables will be submitted. The SAP shall contain a Confirmation Sampling Plan which describes the sampling program to be completed to verify that Clean-up Standards have been achieved.

The Quality Assurance Project Plans (QAPPs) shall comply with the EPA Guidance Document Guidance for Preparing Quality Assurance Project Plans for Superfund Remedial Projects, September 1989.

The Health and Safety Plan shall reflect the requirements of 29 CFR 1910.120 - Hazardous Waste Safety Regulations. Applicable portions of the Occupational Safety and Health Guidance Manual for Hazardous Waste site activities shall also be included in the Health and Safety Plan.

The Operation and Maintenance (O & M) Plan shall describe in detail procedures that will be implemented in order to ensure that all equipment included in the groundwater extraction, treatment, and injection systems continues to operate according to specification. The procedures described shall include, but not be limited to: scheduled visual inspections, scheduled cleaning and/or backflushing, and the use of any chemical additives for corrosion and pH control. The O & M Plan shall include a description of procedures to be implemented in the event that system defects or other problems are encountered during O & M activities.

The Respondents shall meet at least quarterly with EPA and the State to discuss design issues.

#### 1. Preliminary (30%) Design Submittal

The Respondents shall submit a Preliminary (30%) Design for EPA review and approval according to the Schedule and Summary of Submittals (Section V).

At this stage, the Respondents shall have field-verified the nature and extent of contamination at the site and have completed pilot studies. Results of the sampling and pilot studies shall be presented in the Preliminary Design Report.

#### 2. Intermediate (60%) Design Submittal

The Respondents shall submit an Intermediate (60%) Design for EPA review and approval which incorporates EPA comments on the Preliminary Design. The Intermediate Design shall be submitted according to the Schedule and Summary of Submittals.

#### 3. Prefinal (90%) Design Submittal

The Respondents shall submit a Prefinal (90%) Design Submittal for EPA review and approval which incorporates EPA comments on the Intermediate Design.

The Prefinal Design package shall include a draft Remedial Action project schedule, a Construction Quality Assurance Project Plan, a Remedial Action Health and Safety Plan, a Remedial Action Sampling and Analysis Plan, an Operation and Maintenance Plan, an Operation and Maintenance Quality Assurance Project Plan and any required permits and approvals.

The Prefinal Design shall be submitted according to the Schedule and Summary of Submittals.

#### 4. Final Design (100%) Submittal

After approval of the prefinal submittals by EPA, the Respondents shall execute the required revisions and submit the Final Design (100 percent complete) with reproducible drawings and specifications.

The quality of the design documents shall be such that the Respondents would be able to include them in a Request for Proposal (RFP) and Procurement Package.

The Respondents shall submit responses to the bid documents to EPA for review. This review shall be limited to determining whether or not the bidders are both responsive to the requirements of the bid solicitation and capable of performing the RA.

#### D. TASK 4: Prepare Remedial Action Work Plan

Within 30 days of EPA approval of the Remedial Design Plans, the Respondents shall submit to EPA a Remedial Action Work Plan. The Respondents shall revise the Remedial Design Work Plan to become the Remedial Action Work Plan. The Remedial Action Work Plan shall reflect changes in personnel, contractors, schedules, tasks, activities, submittals, meetings, inspections, etc., that will result from implementation of the Remedial Design.

Within 30 days of EPA's approval of the Remedial Action Work Plan (initial and revised), the Respondents shall initiate construction and implementation of the components of the Remedial Action in accordance with the approved construction schedule.

#### E. TASK 5: Construct and Operate Groundwater Extraction and Treatment System

The Respondents shall construct and operate the EPA approved extraction wellfield to restore the aquifer to the ROD cleanup standards. The wellfield shall include holding tanks and pumps and pipes of sufficient size to transport water to the water treatment facility. Extraction of contaminated groundwater shall continue until equilibrium levels of contaminants in groundwater are reduced to the ROD standards. The point of compliance will be the entire aquifer within or adjacent to the site.

Extraction well heads and control boxes that cannot be effectively fenced due to location within residential or active industrial areas shall be covered with a locked, steel enclosure capable of preventing unauthorized entry and infiltration by surface water and rainwater.

The Respondents shall test the groundwater treatment facility and make modifications to the facility as necessary to achieve ROD treatment standards. Modifications shall be reported to EPA and the State and approved by EPA prior to implementation. The Operation and Maintenance Plan shall be revised to incorporate any approved modifications.

The performance of the treatment system will be monitored on a monthly basis and reported to EPA. EPA may require adjustments to the system as warranted by the monitoring results. Examples of adjustments can include changes in flow and pumping rates, changes in treatment scheme, or the addition of effluent polishing procedures.

The Respondents shall handle and dispose of hazardous residuals from the treatment facility in a manner that is protective of human health and the environment and in compliance with Federal, State and local regulations.

**F. TASK 6: Conduct Groundwater Monitoring Program**

The Respondents shall sample groundwater for the Hazardous Substances List of Organics and Inorganics on a quarterly basis to track progress towards compliance with the ROD cleanup goals.

The Respondents shall continue to extract and treat groundwater from the plume area for one year after all wells exhibit contaminant concentrations at or below the ROD standards. Quarterly sampling for the Hazardous Substances List of Organics and Inorganics shall continue for three years after cessation of pumping. If groundwater monitoring indicates that the concentration of contaminants has increased above groundwater treatment standards at any time during this three year period, the Respondents shall notify EPA and reactivate the groundwater extraction and treatment systems until ROD standards are met. The cycle of pumping for one year after ROD standards are met and monitoring for three years after cessation of pumping will continue until ROD standards are met for three years after cessation of pumping.

Groundwater ROD cleanup standards are as follows:

<u>Contaminant</u>	<u>Standard (ppb)</u>
Trichloroethylene	5
1,2-Dichloroethane	.5
1,1-Dichloroethane	5

1,1-Dichloroethene	6
Benzene	1
Vinyl Chloride	.5
Carbon Tetrachloride	.5
Cis-1,2-DCE	6
Trans-1,2-DCE	10
Iron	300
Manganese	50

Based on additional sampling conducted during Remedial Design and any changes to standards or action levels, the above cleanup goals are subject to change. Contaminants may need to be added or deleted or cleanup goals revised.

The RA Health and Safety Plan and Sampling and Analysis Plan shall be updated as necessary for each sampling event during operation and maintenance.

The Respondents shall prepare a draft and final Quarterly Groundwater Monitoring Report summarizing the results of each sampling event. The report shall include a review and interpretation of validated analytical data, a determination of any analytical variations from previous analyses, and a graphic presentation of the data. The monitoring data shall be submitted in hard copy and computer disk.

Groundwater levels shall be monitored weekly during system startup and monthly thereafter. Data on groundwater levels shall be submitted with the Monthly Progress Reports.

#### G. TASK 7: Conduct Inspections

##### 1. Preconstruction Inspection and Meetings

EPA may require the Respondents to conduct with EPA and the State preconstruction inspections and meetings to:

a. Review methods for documenting and reporting inspection data for the Remedial Action.

b. Review methods for distributing and storing documents and reports.

c. Review work area security and safety protocols.

d. Discuss any appropriate modifications of the Construction Quality Assurance plans to ensure that site-specific considerations are addressed.

e. Conduct a site walk-around to verify that the design criteria, plans, and specifications are understood and to review material and equipment storage locations.

The preconstruction inspections and meetings shall be documented by a designated person and minutes shall be transmitted to all parties.

## 2. Prefinal Inspections

Upon preliminary completion of construction of the Remedial Action, Respondents shall notify EPA for the purpose of conducting a Prefinal Inspection. EPA may require a Prefinal Inspection which shall consist of a walk-through inspection of the project site. The inspection is to determine whether the project is complete and consistent with the contract documents and the EPA approved Remedial Action. Any outstanding construction items discovered during the inspection shall be identified and noted. Additionally, treatment equipment shall be operationally tested by the Respondents. The Respondents shall certify that the equipment has performed to meet the purpose and intent of the specifications. Retesting will be completed where deficiencies are revealed. The Respondents shall outline in the Prefinal Inspection Report the outstanding construction items, completion date for these items, and date for Final Inspection.

## 3. Final Inspection

Upon completion of any outstanding construction items, the Respondents shall notify EPA for the purpose of conducting a final inspection. EPA may require a Final Inspection which shall consist of a walk-through inspection of the project site. The Final Inspection shall focus on the outstanding construction items identified in the Prefinal Inspection. EPA will confirm that outstanding items have been resolved, or identify items that remain outstanding. A Final Inspection Report shall document the findings and actions taken to address deficiencies identified in the Prefinal Inspection Report.

## H. TASK 8: Prepare Reports

The Respondents shall prepare plans, specifications, and reports as set forth in Sections I through IV above to document the design, construction, operation, maintenance, and monitoring of the Remedial Action. Other documentation shall include, but not be limited to, the following items.

## 1. Progress Reports

The Respondents shall, at a minimum, provide EPA with signed monthly progress reports during the design and construction phases and monthly progress reports for operation and maintenance as appropriate for the Remedial Action. The monthly reports shall contain the following items:

a. An estimate of the percentage of project completed, and the total project cost to date.

b. A summary description of work performed during the reporting period.

c. Summaries of all changes made in the RD/RA during the reporting period.

d. Summaries of all contacts with representatives of the local community, public interest groups, or State government during the reporting period.

e. Summaries of all problems or potential problems related to each component encountered during the reporting period.

f. Actions being taken to rectify problems.

g. Changes in personnel during the reporting period.

h. Projected work for each component for the next reporting period.

i. Copies of inspection reports, laboratory/monitoring data, etc.

## 2. Daily Construction Reports

Daily construction reports shall be prepared by the construction site manager describing daily activities, problems encountered, and actions taken to resolve problems.

The daily reports shall be accumulated for one week and submitted EPA.

## 3. Annual Report

The Respondents shall submit an Annual Report summarizing groundwater monitoring data and treatment system operational data, as appropriate, for the previous year.

The Annual Report shall be combined with the December Quarterly Groundwater Monitoring Report and, in addition to the elements required for the Quarterly Report, shall contain information that demonstrates that the Respondents are complying with Quality Assurance Project Plan.



#### 4. Remedial Action Implementation Report (Report of Completion of Construction)

The Respondents shall at the "completion" of construction of the Remedial Action (that is, at the point at which the RA has been operating according to specifications), submit a Remedial Action Implementation Report to EPA. The report shall document that the project is consistent with the design specifications, and that each component is performing adequately. The Reports shall include but not be limited to the following elements.

a. Synopsis of the Remedial Action and certification of the design and construction.

b. Explanation of any modifications to the plans and why these were necessary for the component.

c. Listing of the criteria, established before the Remedial Action was initiated, for judging the functioning of the Remedial Action and also explaining any modifications to these criteria.

d. Results of facility monitoring, indicating that the component will meet or exceed performance criteria.

e. Explanation of the operation and maintenance to be undertaken at the facility.

#### V. SCHEDULE AND SUMMARY OF SUBMITTALS

##### Submittal

##### Due Date

Draft Remedial Design Work Plan

30 days after <sup>60</sup>  
effective date of  
the Order

Final Remedial Design Work Plan

30 days after  
receipt of EPA  
comments on Draft  
Work Plan

Preliminary Design (30% Completion)

30 days after EPA <sup>150</sup>  
approval of Final RD  
Work Plan

Intermediate Design (60% Completion)

45 days after  
receipt of EPA  
comments on  
Preliminary Design

Prefinal Design (90% Completion)

45 days after  
receipt of EPA  
comments on  
Intermediate Design

Final Design (100% completion)

30 days after  
receipt of EPA  
comments on  
Prefinal Design

Draft Remedial Action Work Plan

Submitted with Final  
Remedial Design Plan

Final Remedial Action Work Plan

30 days after  
receipt of EPA  
comments on Draft  
Remedial Action Work  
Plan

Draft Groundwater Monitoring  
Report

2 weeks after  
receipt of valida-  
ted data

Final Groundwater Monitoring  
Report

2 weeks after  
receipt of EPA  
comments on draft

Notice of Preconstruction Inspection  
and Meeting

Submitted with  
Final Design Plan

Preconstruction Inspection and  
Meeting Report

15 days after  
meeting

Weekly Construction Reports

Ongoing during RA

Notice of Prefinal Inspection

In accordance with  
Final RA schedule

Prefinal Inspection Report

15 days after  
Prefinal Inspection

Notice of Final Inspection

30 days after  
Prefinal Inspection

Final Inspection Report

15 days after Final  
Inspection

Remedial Action Implementation  
Report

60 days after  
approval of Final  
Inspection Report

Progress Reports

Monthly during RD,  
and first year of  
of O&M and quarterly  
thereafter

Annual Report

2 weeks after  
receipt of valida-  
ed data for the  
final quarterly  
sampling event of  
the calendar year

@ SOUTH PACIFIC DIVISION  
JIM RUHL 415-705-1621  
AHSAN 3467 415-705-1515

US ARMY ENGINEER DISTRICT  
LOS ANGELES  
EXECUTIVE OFFICE

CONSTRUCTION-OPERATIONS DIV  
*2072*

CARL ENSON 213-879-5600

CONSTRUCTION BRANCH  
*WCOIT 5* *DE*  
CHET  
Super Civil Eng  
DT 3604 (CE3PL-CO-C)  
1 Secretary (Typing) CS-05  
1 Clerk Typist (M) (F) CS-03

JOE PICKENS (?)  
213-879-5609

QUALITY ASSURANCE SECTION  
*WCOIT 4* *DE*  
CHET  
Super Civil Eng  
DT 3618 (CE3PL-CO-CS)  
1 Struct Eng CS-12  
1 Dist Eng *DOVE* CS-12  
1 Mach Eng CS-12  
1 Civil Eng Tech CS-12  
1 Civil Eng CS-11  
1 Clerk Typist CS-04

CONSTRUCTION MGMT SEC  
DANIEL Y. GEE CHET  
Super Civil Eng  
DT 3604 (CE3PL-CO-CM)  
1 Civil Eng *?* CS-12  
3 Civil Eng (F) CS-12  
1 Civil Eng CS-11  
1 Budget Asst CS-07  
1 Program Reports Clerk (M) CS-06  
1 Prog Rpt Clerk (M) CS-05

PROGRAM REPORTS UNIT  
KAREN WARREN CHET  
Super Budget Asst  
DT 3600  
1 Prog Analyst CS-07  
1 Reports Clerk (M) CS-06  
1 Program Reports Clerk CS-05

CONTRACT ADMIN SECTION  
*WCOIT 4* *DE*  
CHET  
Super Civil Eng  
DT 3600 (CE3PL-CO-A)  
2 Civil Eng (1-M) CS-12  
1 Civil Eng (M) CS-11  
1 Civil Eng Tech (M) CS-06  
1 Secretary CS-05

ENVR CONSTRUCTION SECTION  
FRANK S. GUAL CHET  
Super Civil Eng  
DT 3645 (CE3PL-CO-CE)  
6 Civil Eng CS-12  
2 Const Rpt (1-M) CS-11  
1 Civil Eng (M) CS-11  
1 Reports Clerk CS-06  
1 Clerk Typist CS-03

5 CV  
36 CS

**Appendices F and G**  
**(Settling Cash Defendants)**  
**(Settling Federal Agencies)**

## APPENDIX F - SETTLING CASH DEFENDANTS

Chevron USA, Inc.; A. Levy & J. Zentner Co.; A. Teichert & Son, Inc.; A. Volpato, Inc.; Aerojet-General Corporation; AlliedSignal, Inc.; Aramark Uniform Services, Inc.; Atchison, Topeka, & Santa Fe Railway Co.; Atlantic Richfield Company; Balattis Kaljian Motor Co.; Baldwin Contracting Company; Beechcraft West, Inc.; Beech Aircraft Corporation; Bekins Moving & Storage Co.; BHP-Utah International, Inc.; Borden, Inc.; Bridgestone/Firestone Inc.; Brown & Root, Inc.; Burns Chevrolet Co.; Burns Trucking Company, Inc.; RT Burns, Inc.; Calaveras Cement Corp.; California Department of Forestry and Fire Protection; California Department of General Services; California Department of Transportation; California National Guard; Champion International; Chico Unified School District; City of Fresno; City of Madera; City of Redding; City of Sacramento; City of Yuba City; Commercial Body Sales & Manufacturing; Connell Motor Truck Co.; Continental Baking Company; Continental General Tire; County of Fresno; County of Tehama; Cummins West, Inc.; Del Monte Foods; Diamond Truck Sales; Downtown Ford; E.I. Brandt Trucking Co., Inc.; Electric Garage; Endless Ventures (f/k/a Frank J. Sanders Co.); Exxon Corporation; Fleming Companies, Inc.; FMC Corporation; Foster Farms; Frederickson Tank Lines, Inc.; Fresno Community Hospital; Fresno Truck Center; Fresno Westside Mosquito Abatement District; Gottschalk's Inc.; Granite Construction Company; Green Valley Ford; Gridley Country Ford-Mercury; Guild Cooperative; H & J Chevrolet; H.R. Beeler Tractor & Equipment, Inc.; Hallowell Chevrolet; Hamon Enterprises (f/k/a Mid-Valley Toyota); Haron Motor Sales; Hobbie Chevrolet; Hoblit Motors; Hubacher Cadillac, Inc.; J.C. Penney Company, Inc.; J.R. Simplot; Jenson & Pilegard; John Roth Chevrolet; John Wheeler Logging, Inc.; Kerman Unified School District; Kimberly-Clark Corporation; Kings County Truck Lines; Larry Geweke Ford, Inc.; Lassen Tractor Company; Lee's Concrete Materials, Inc.; Maita Oldsmobile; McClatchy Newspapers, Inc.; McCloud River Railroad Company; McColl's Corporation; McKenzie Trucking; McKesson Corporation; Mele Investment Group, Inc.; Merced Irrigation District; Merced Union High School District; Michigan-California Lumber; Mobil Oil Corporation; Montgomery Ward; Morrison-Knudsen; Navistar International Transportation Corp.; PACCAR Inc.; Pacesetter Chevrolet; Pacific Bell; Pacific Gas & Electric; Peart's Auto Supply; Phillips Petroleum; Pistoiresi Motors; Producers Cotton Oil Company; Quinn

Company; Rainbo Baking Company of Fresno; Redding Kenworth Company; Roadway Express, Inc.; Royal Miller Jr., Inc.; S.J. Denham Chrysler Plymouth, Inc.; Safeway, Inc.; San Juan Unified School District; Sears Merchandise Group; Shasta Union High School District; Darwin G. Shebelut (a/k/a Pacesetter Chevrolet); Sheldon Oil Company; Shell Oil Company; Southern Pacific Transportation Co.; Sun Maid Growers of California; Swanson-Fahrney Ford; Taylor Motors; Ted Smith Equipment; Tenco; Texaco, Inc.; Toscano RV Center; Toyota of Merced; Transportation Leasing Co.; Ultramar, Inc.; Union Carbide Corporation; Union Oil Company of California; Union Pacific Railroad; United Parcel Service, Inc.; United States Cold Storage of California; Valley Grain Products, Inc.; Valley Truck and Tractor Co., Inc.; Vandenberg Motors, Inc.; Van Gas/Suburban Propane/Quantum Chemical; Vincent Ganduglia Trucking; Western Piper Sales/WPS Holding, Inc.; Wheeler Oldsmobile/Cadillac; E.L. Winter; Woodard Chevrolet; Yosemite Concession Services Corp.; Yuba Community College District; Zellerbach Paper Company.

#### **APPENDIX G - SETTLING FEDERAL AGENCIES**

United States Navy and United States Marine Corps; U.S. Postal Service; General Services Administration; United States Air Force; United States Army.